



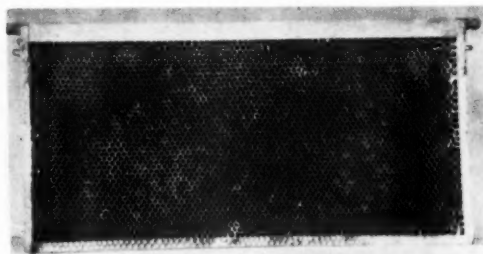
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**1952 Support
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The U. S. Department of Agriculture has announced that honey prices will be supported by the Government at a national average of 11.4 cents which is 70 per cent of parity adjusted for honey in 60-pound containers. According to the Wall Street Journal report, the support price for last year averaged 9.9 cents which reflected 60 per cent of the adjusted parity figure. The Department also announced that the method of support will be (1) through farm and warehouse storage loans and (2) that the Commodity Credit Corporation also will purchase honey under purchase agreements.

The final details of the program are now being worked out and it is hoped that publication of the program will appear in the Federal Register the first week in April. We hope to have full details in the May issue.

It is indicated that the support level of 11.4 cents as a national average will reflect price differentials based on color and geographical areas. Beekeepers applying for loans or purchase agreements will go directly to their county P. M. A. offices which suggests the advisability of having a beekeeper on these county committees.

The 1952 program thus promises a higher support level which should result in a better price for producer's honey. The industry has requested this type of program and a level higher than 60 per cent of parity ever since price support became mandatory. Now that it has the kind of a program it felt it needed, it is going to be up to the honey industry to take full advantage of the program and, at the same time, do everything possible to see that honey moves through normal channels of trade and with little or no honey moving to the government. No single thing will kill our support program quicker than for producers to turn a large quantity of honey to the government.

The Government also announced the continuation of the export subsidy program on the basis as in the past. The diversion subsidy program will be continued but payments will be increased from 3% to 4½ cents per pound.

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THE AMERICAN BEE JOURNAL

HAMILTON, ILLINOIS

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Food for Thought

Soil Effect on Honey Quality and Honeyflow . . .

The Yorkshire Beekeeper (England) reports that Dr. Versey of the Geological Department of Leeds University proposes to start correlating trace elements in honey with recognized subsoils and subsoil effects.

Geo. W. Green of the same University who is collaborating, states that not only does the soil have effect on the honeyflow intensity but on the color and quality of the honey also.

Here is a subject that needs thorough investigation and one which has been sadly neglected by our own scientific investigators. We have long known that buckwheat and cotton for two examples act differently as to nectar flow, determined at least partly by the type of soil on which they are grown. The ramifications of this must be manifold over the whole field of honey plants. It seems urgent that we have definite data on this subject for the benefit of the honey producer himself. But how much more necessary since the wide agitation for better pollination through more uniform distribution of honey bees.

The professional beekeeper-pollinator might also be better able to judge his possibilities and hindrances both for honey and for seed had he some indication how the plants would do on the specific type of soil on which the seed crop was to be raised.

Here is a big and complicated field for future research. It appears that the British might "beat us to it."

We have always deprecated the tendency of scientists to resent anyone else working in their specific field rather than the whole hearted co-operation which should exist to make the most of the work done. Perhaps here might be an opportunity for an exception and a chance of getting away from those bureaucratic tendencies.

Me and My Association . . .

Recently we learned of a young lady in Britain who was making a survey of beekeeping organizations. Requests came to us to furnish the number of organizations in this country, size of membership, and objectives, which we were glad to do as far as we were able.

Reflection indicates that associations in this country are either decadent or circumstances are not such as to bring into being generally active and large local and state beekeepers' organizations.

The average number of beekeepers who are members of our associations is a mere trifle compared to most European countries. There, local associations have hundreds on their rolls, a paid secretary, library, educational and scientific objectives and, in many in-

stances, some form of insurance against theft, fire, and even foulbrood losses.

Have we become too profit-minded to afford the expense of belonging to an association? A more attentive ear to industry problems through organization can accomplish far more than the expense involved.

Is it possible that we can't spare the time? A prominent educator recently stated that the American people generally have lost the art of taking vacations, of occupying their slack time. Dad no longer finds time to play ball in the back yard with the boy or sit for a leisure hour watching the birds disport themselves in the skies. When it is time for a vacation, wham! A week is taken off and as much crowded into it as should be laid out for a month. A 20-minute visit with the neighbor across the fence is a rarity. Perhaps that is why we never find time to enroll as members and to attend our meetings.

After all, what you and I do about meetings determines largely what that meeting and that association will amount to. And we are living at a time when only through organization can we hope to solve industry problems which need solving. The organizations of the industry need your support, but more than that, you need their help, Mr. Beekeeper.

We Need Minor Honey Sources

Now R.E.A. is spraying the brush and young trees along highways to rid themselves of the necessity of topping trees which interfere with the highlines carrying current to farmers. At least we observed this being done on some of the local highways. This new move to save overhead for R. E. A. adds insult to the injury to bees through injudicious use of spraying cultivated fields and pastures.

It seems strange that in one area authorities are encouraging plantings which provide food and cover for wildlife, while in other areas the opposite is true.

The February issue of *Soil Conservation*, published by the Soil Conservation Service, has a delightful article on *Lespedeza bicolor* by Walter Rossine. It has been recommended in many southeastern states as ideal for wildlife, particularly quail, as cover and food. It is a plant about like hazel brush, unfit for field cultivation. It does well in thin soil along the edge of timber and margins of hollows and ditches. Pellett recommends it for honey bees. Bees sought it avidly at Atlantic, Iowa, and it appears that its range may be extended farther north. More than 50 million plants have been established in the southeast in the past three years.

The late Frank C. Pellett continuously strived for a balanced agriculture and a balanced beekeeping through proper consideration for minor as well as major honey plants. We need to cooperate with the wildlife organizations and others interested in retaining the natural beauty and utility of our natural landscape. Most certainly we need to make an honest effort to stop further roadside spraying under the guise that it may save a few dollars in brush trimming.



Queen Bee Round-Up



This picture of the queen and worker and the cover picture of the queen bee were taken by Dr. Park.

Behavior of the Queen Bee

by Dr. O. W. Park

Iowa State College, Ames, Iowa

WHATEVER may be the governing force of the colony, it most certainly is not the queen. Mentally less highly developed than the workers, she is little more than a slave, an automaton—in short, an egg-laying machine. Yet in some unknown way, the queen wields a distinctly beneficial influence on colony morale. She is moreover, the one and only individual indispensable to the welfare of the colony.

Mother of all other bees in the colony, the queen—strange as it may seem—is totally devoid of any mothering instinct; takes absolutely no interest in her developing offspring. A queen's work is restricted to the laying of eggs, while all other functions of a mother, including incubation of eggs, nursing, and otherwise caring for and protecting the young, are delegated to the workers.

The Virgin Queen

A young queen's first goal is to free herself from the narrow confines of her cell. Head downward within the cell, she bites through the fibrous cell wall where her mandibles conveniently come into contact with it at some point along its circumference. As the cutting proceeds, she turns herself little by little until she has cut almost a complete circle, then the hinged lid swings open and the virgin emerges.

Disposal of Rivals.—After taking a sip of honey from an open cell, she shortly proceeds to her first important task—disposal of all rivals.¹ Actual rivals are attacked with vigor and the battle is to the death. Disposal of potential rivals involves less risk. Using her mandibles, and often assisted by the workers, the virgin tears a hole through the side of each remaining sealed queen cell near its base. If

the inmate is about ready to emerge, the attacking virgin inserts her abdomen and administers a fatal sting. Less-mature nymphs, or larvae, seem to arouse less concern but do not escape their doom: for any premature opening of a queen cell results in its occupant being thrown out by the workers, whether larva, pupa or queen.

Mating.—About a week after emergence, mating takes place in the open air during flight. In many cases, one or more prenuptial, or orientation flights are made. Both nuptial and prenuptial flights are taken during midday, when drones are on the wing in greatest numbers. Occasionally a queen returns mated within a few minutes, but usually her absence lasts from 10 to 30 minutes, or even longer. Many

¹ In cases of superseding, mother and daughter often live and work in harmony.

We are prouder of this issue than we were of March. Those who wrote the Pre-flow Round-up were really good, so it is not with the Round-up that we are concerned; but with the general section. Dr. Farrar's package article was supposed to spearhead the February Package Bee Round-up but clearance did not come in time from the Government

for its use so we felt we had to use it in March. Also, we could not let the loss of our good friend Parks go without due recognition.

But this month we are inordinately proud of both the Round-up and the general section and if readers don't feel the same way we will be much disappointed. Let us know what you think about it.



Workers are the bulk of the colony population. Eight thousand workers and about 20 drones emerged from this comb within a few days after this picture was taken. (Photo by Dr. O. W. Park. This picture and the one at the top of the preceding page appeared in the second edition of "The Hive and the Honey Bee.")

queens mate twice instead of but once, as formerly believed; but rarely, if ever, does a queen mate after once beginning to lay.

The Mated Queen

At mating, the queen acquires a lifetime supply of spermatozoa, which is stored in a reservoir connected with the oviduct by a short tube through which the spermatozoa are released, a few at a time, to fertilize, as they pass, such eggs as she may determine. Eggs that receive spermatozoa develop into females (workers or queens), while eggs from which they are withheld develop parthenogenetically into drones. Thus a queen is able to lay "male" or "female" eggs "at will." This she does systematically and with due regard for the needs

of the colony, placing "male" eggs in drone-sized cells and "female" eggs in worker and queen cells.

The queen usually begins laying on the second or third day after impregnation. Seldom is she accorded much attention until after she has begun to replenish the cells with eggs. If previously deprived of her, however, the workers show by their peculiar behavior that they fully appreciated her importance to their welfare.

Working Habits.—A good queen works in an orderly fashion, affixing a single egg to the base of each cell and leaving but few vacancies within the area worked. Doubtless she inadvertently misses a cell now and then, but part of the vacancies are accounted for by the fact that she inspects each cell before laying

in it, and rejects such as are not clean and well-polished. Upon finding the cell clean and unoccupied, she withdraws her head, moves slightly forward, arches her abdomen, and deftly inserts it until contact is made with the cell base. Momentarily she remains motionless, then pivots partially around the cell, and withdraws. The newly laid egg stands out at right angles from the cell base, but gradually declines until by hatching time it lies against the base. After laying in an area, the queen then fills the corresponding area on the opposite side of the comb. Gradually she enlarges these areas and extends her laying to adjacent combs.

Output.—This animated egg-laying machine performs with such amazing efficiency that her daily output often exceeds her own weight which, on account of the developing eggs in her ovaries, is then about double what it is outside the brood rearing season. Counts indicate that even the most prolific queens seldom lay in excess of 1500 eggs per day, or just about one per minute. Queens, however, do not lay continuously but alternate between work and rest periods. At times an active queen will deposit 75 to 100 eggs within a period of about 15 minutes, after which she will desist for some minutes to rest and take food. A queen's laying increases or decreases according to: (1) the season, (2) colony strength, and (3) the kind and amount of food supplied her by the nurse bees.



BEESKEEPERS in the honey producing states provide a large part of the market for the queens raised by commercial queen

What the Honey Producer Wants When He Buys Queens

by John W. Holzberlein, Jr.

breeders. Their cash outlay for queens each year represents quite a sum. This expenditure is in the nature of an investment, an investment on which the purchaser has a right to expect returns. It has been said that the queen is the spark plug of the colony. When one puts new spark plugs into the motor of his car he expects improved performance and better mileage. A new queen should give similar results, she should give the colony a tune-up. This is not always the case, however, and too often the

newly purchased queen is not much better than the one she has replaced. Just because a queen is young is no proof that she is always good.

What constitutes this ideal queen, this good investment? Let us list her qualities numerically:

1. It is axiomatic that she be young.
2. She should be of good stock.
3. She must be properly reared—have good size, good egg capacity.
4. She must be healthy, free from Nosema disease.

5. She must be properly mated, fully inseminated.

6. She must be carefully handled.

7. She should arrive on time.

If these seven points are carefully adhered to, and the queen is then satisfactorily handled on the receiving end, she is almost certain to give the desired results. But failure on any one of these points may offset the others to the extent that the purchaser may lose a great deal more than the initial cost of the queen. Such failure results in the loss of a crop from the colony for which the queen was intended as well as much valuable time. . . . Let us take up these points singly.

1. The queen must be young. It is easy to recognize a young queen laying on a comb of brood, but seeing her after a long trip in a mailing cage is another thing. While I have never known a queen or package man to ship queens from overwintered colonies, yet I have heard the accusation made. I would judge it a poor practice.

Young, yes, but not too young either. She should be laying by all means, and it is preferable if her brood is far enough advanced so that one can see what the "pattern" is going to be. This may be observed at a glance by an experienced person just before the brood is sealed. If the brood is spotty, the queen is doubtless faulty and will never be able to maintain a top notch colony. We don't want that kind.

2. She should be of good stock. All purchasers of queens do not want the same stock, but a breeder of queens should endeavor to maintain a stock with certain basic characteristics, most of which are conducive to honey production. Maintaining this stock through the selection of breeder queens is one of the queen man's greatest problems. He should not hesitate to expend great effort to establish and then improve and maintain a strain that the purchaser can depend on year after year.

3. The queen breeder's greatest chance to improve his product is probably from the time the young larvae are selected to graft until the cells are put into the mating nuclei. Things he cannot perceive and things he cannot control often take over outside this period, and all that is left for him to do is cull the finished result. But during these 10-11 days conditions are largely under his control and the

size of the laying queen is pretty much the result of his skill. Other things being equal, big, husky queens are always best. Once in a while we see a medium sized queen of outstanding quality, but I'll take the rugged, agile, young mother that literally wades through the bees like the queen that she is. She is the queen that has the capacity to put out frame after frame of worker eggs, day after day till the season is over. It takes lots of bees to make lots of honey—it takes lots of eggs to make lots of bees. We stand the best chance of getting those eggs from the big queen that was lavishly fed in a big, rugged queen cell that was not "picked too green" or handled too roughly.

4. The queen must be healthy. To be healthy she must come from a nuc that is free from disease, not only the brood diseases but also the adult diseases, principally Nosema disease. During cold, cloudy, backward spring weather, Nosema disease gets so widely spread that nucs, especially small nucs, become badly infected. Even though the queen may not be infected when she is caged, she is almost certain to be when she arrives at the end of a two-to-four day trip caged up with several infected attendants. When Nosema conditions are suspected, attendant bees should be taken from strong colonies with only young bees, whose flying bees have been lost by daily moving, and never from the old, often worn out bees of the nuc itself.

5. The queen must be properly mated. This is a "toughy," but no queen whose mating is questionable should ever be shipped. She will be a total loss. During foul weather queens often fail to mate on time, and as a consequence never properly mate or produce quality brood. Nor does the improperly mated queen last long; her sperm becomes exhausted and she becomes a partial drone layer or is superseded before her time. Too close line breeding may often force queens to mate with drones whose genes are not compatible, resulting in spotty brood. Although the queen may lay a normal amount of eggs their low viability results in too small a number reaching maturity to maintain a strong colony. In order to produce consistently good queens more attention is being paid to the mating factor. It is being recognized that special drone-mother colonies should be maintained in or near mating yards.

6. The queen must be carefully handled. Too often queens are injured when being put into mailing cages or while in transit. Thus weeks of careful work go for naught. Only skilled help should be employed to cage queens for this is the point where culling should be done. Faulty brood, undersize, dragging legs or crippled wings are all reasons for killing the queen instead of caging her. There is often a rush to get the queens caged, and I suspect that many times the doubtful queens are caged to swell the count or get the order filled. After caging there is still need of careful handling. Queens are surely durable creatures, but they are not indestructible as some seem to believe. They are quickly injured by direct exposure to the rays of the sun and by exposure to temperatures below the clustering point. The necessary act of mailing is in itself no help to getting a queen to her destination in as good shape as she was when she left the nuc.

7. She must be on time. In other words we want service. Timing is as important to the honey producer as to the queen breeder. It is the very essence of success. All of us who have had some experience know that bad weather can wreck a schedule. For that reason some allowance for bad weather should be made on both ends. Our queen installing operations are set up weeks in advance, and to have a shipment of queens a week or ten days late without warning can be disastrous. It often happens, too, that when the queens should have arrived the weather was good, but if they are late they will arrive when it is storming. For that reason it is important that queen breeders do not book too heavy schedules. And when the best laid plans are even then upset as they often are, notify the customer, by wire if necessary, that his shipment is going to be late, and approximately how late. He will appreciate it to the extent that repeat orders will often follow. And then, if in spite of the best you can do, you have sent out some poor queens, make them good. If it is too late to do it in time for the current season make arrangements to send replacement queens to the purchaser when they have their greatest value to him the following season. Honey producers have long memories, but on the whole I believe they try to be fair.

Colorado



Judging the Queen

by Dr. Wm. C. Roberts

Bureau of Entomology and Plant Quarantine*, Agr. Res. Adm., U.S.D.A.

THE ancient Roman Varro stated that "in sheep the most important point to watch is to have a sire from good stock. This can usually be judged by two points—the form and the progeny." Further, he says there are "three kinds of kings among bees—black, red, and striped." And according to Menecrates "the striped is better than the black." It is difficult to understand why then and even now queens are judged by color but rams by their form and progeny. Possibly it is because color is the most obvious characteristic of bees.

Beekeepers have long attempted to improve the productivity of their colonies by judging and selecting queens. Race differences were observed and there have been many proponents of racial superiorities. Close observers, however, noted as much, if not more, difference within races than between the average of races. Selection of queens for color and other racial characteristics was the logical result. The real danger of this method of selection is that so much attention was given to appearance as an indication of productivity that productivity itself was assumed rather than selected.

Individual appearance has a market value when customers want it and are willing to pay for it whether or not it is of practical value. In meat animals such as cattle and hogs, appearance and type not only indicate production but actually come close to being production. In milk cows and poultry it has been found that more attention should be given to production records than to type, but type should not be neglected altogether.

It has been said that "fine feathers

don't make hens lay and fancy points don't make corn yield." The beekeeper must decide whether he wants beauty or bounty in the hive, color or a crop, a pretty queen or a productive queen, a luscious queen or a laying queen. If his primary concern is profit, then he wants queens with high egg production potentials, because honey production is directly correlated with population and population is correlated with egg production.

To a colony of bees, the queen has the one major function of producing eggs. Most queens will lay enough eggs for the colony to survive. To most beekeepers the valuable queens are those that lay enough eggs for the colony to maintain the large population necessary for economical production.

Color and type in queens are correlated with desirability only insofar as the individual queen concerned is typical of her breed. The breeder of bees attempts to fix each breed not only for uniformity of type and color but also for productivity. With good queen rearing methods, his queens will thus appear alike. This will please both the producer and the customer. The customer desiring profit will provide every opportunity for the queens to produce according to their ability. Those that fail the test are replaced as soon as they show weakness.

Beauty in most animals is something that is believed to go with economic usefulness. The beauty of one breed is not necessarily the same as that of another. A breeder of Jerseys thinks a Holstein cow is abominably ugly, and vice versa. The beautiful productive queens of one breed may appear outwardly very different from the equally productive queens of another breed. The beautiful queen is the one that shows to perfection the average norm of the most profitable queen of her breed. There is no single standard of appearance by which one should judge all queens.

In honey bees as in most animals studied, it has been found that the larger queens within each breed tend

to be the heaviest producers. All small or abnormal queens of any breed should therefore be discarded. In this way most of the poorest producers are eliminated. Thereafter, one should cull out the poor producing queens regardless of their color, type, or appearance. Culling and replacement of queens should not be a seasonal project but should be done at any time that an unsatisfactory performing queen is discovered.

Before judging, one should first be sure that the queen has had an opportunity to show her ability in the colony. This means ample amounts of honey and pollen, plus a normal population of disease-free workers.

In spite of the fact that there is still insufficient information on many of the particular traits, it is possible to formulate a series of generalizations. The profitable queens of most strains of bees may be described as follows:

1. large size
2. long, deep, and moderately tapering abdomen
3. loosely coupled between head, thorax, and abdomen
4. long legs
5. a large amount of brood uniformly arranged

The poorer queens usually have one or more of the following traits:

1. small size
2. small or flat abdomen
3. close coupled and of chunky appearance
4. short legs
5. a small amount of brood or irregularly arranged brood

In appearance both good and poor queens may be of any color. Therefore, one should not judge a queen by her color.

The queen is the mother of all the workers in a hive. However, these workers also have a father, who has long since ceased to exist. It is recognized that offspring tend to resemble their parents, but the queen

1 Based on the Madison laboratory stock tests of over 4,000 queens, representing many commercial sources of Italian, Caucasian, and Carniolan strains of bees, as well as numerous hybrid combinations derived from inbred lines.

* In cooperation with the Wisconsin Agricultural Experiment Station.

is the only parent the beekeeper sees. Therefore, he is probably only half right in judging the individual queen, for he has no assurance that the mate resembled the queen.

Many characteristics of economic importance to beekeepers, such as temper, nectar and pollen gathering, use of propolis, capping honey, swarming resistance to disease, etc. are not expressed in the queen. These can be judged only in her worker offspring. The offspring of sister queens may differ greatly in one or more of these. In such cases the drone may be the culprit or the valuable individual and the beekeeper's confusion in judging is further

confounded.

Although queens may live for several years, very few remain economically productive for more than two years. A great many are liabilities in their second year and many will fall before they are one year old. There is at present no way to judge the productive life of a queen by her outward appearance. An aid in selecting and evaluating individual queens is to clip and mark each queen so that her loss or replacement can be detected immediately. The practice of marking queens tends to make the beekeeper "queen conscious" and therefore more observing of those factors that dis-

tinguish good queens from poor queens.

A good method of keeping a large percentage of all colonies with productive queens is to keep a supply of reserve queens in nuclei and use these to replace any falling queen as soon as she is discovered, regardless of her age or appearance or whether it is spring, summer, or fall requeening.

Where bees are kept for profit rather than for pleasure, queens should be judged by their fruits rather than by their feathers, by their colonies rather than by their colors, and by output not outlook.



Marking Queen Honey Bees

by Dr. John E. Eckert

The materials used in marking queens generally consist of a quick drying enamel containing some bright color, such as white, bright yellow, bright green, blue, or red. Colors may be varied from year to year to indicate age at a glance. Fingernail polish or automobile lacquers are frequently used.

The Eckhardt marking device consists of a small sharpened tube for punching out small discs of bright colored paper or foil and a rod inside the tube for pressing the disc against a small spot of glue placed on the thorax of the queen. Numbers can be printed on the discs to identify each queen.

Another way of marking queens to indicate their age is by clipping the wings on the right side in years ending in even numbers and the left wings if the year in which the queen was introduced or reared ends in an odd number. The wings should be clipped about half their length.

The marking pigments can be kept in small containers, such as

fingernail polish jars, equipped with a brush in the cap. These jars can be held in the left hand during the marking process or can be fastened to a tool box which may also serve as a hive seat. The brush used in applying the pigment should be fine enough so that it will not hold too much pigment, and surplus paint should be rubbed off as the brush is being removed from the vial.

The procedure in marking and clipping a queen consists of catching her by all four wings with the right hand, without pressing on her abdomen, then placing her on the left index finger in such a manner that she can be held in place by gently pressing her middle and hind legs on one side with the thumb against the index finger before she is released by the right hand. By thus grasping two of her legs on one side she cannot twist around and injure a leg. While being held in this position, she can be clipped and marked with ease, held a second or two to permit the enamel to dry

A QUEEN that is marked with a bright spot of pigment on the dorsal part of its thorax is much easier to find than one not so marked, particularly if she is young and active or is the queen of a black colony. The color used may indicate her age, origin, stock, or pedigree; method of production, manner of rearing, or any number of other factors. The main purpose of marking a queen is to find her when one wants to do so and to know that she is the one introduced and not a supersede queen or a replacement.

Method of holding the queen for clipping her wings or marking her thorax.

Marking queen. A good, luminous paint is proving to be very satisfactory.



slightly, and then released on the comb or run into a queen cage. (If the pigment jar is also held in the left hand, be sure to replace the cap before releasing the queen. Much pigment has been spilled and some queens ruined by not doing so.)

Queens can be marked or clipped whenever they are found but they are found easiest in the spring of the year when the colony is not so populous, or when they are caged out of the nucleus. Some Caucasian queen rearers permit their queens to emerge in cages and mark them before they are introduced into their nuclei. The Rauchs Apiaries, of Colorado and Wyoming, used this method to advantage. The young queens would be released from their cages before a glass window of the

grafting room and were marked when they were a day old before being introduced into their nuclei. In this way it was assured that the mated queen removed later was the one that had been reared and not a stray or a replacement by the bees.

Those painting their first queens should observe some precautions, and possibly practice on a few drones. The paint should be rubbed lightly through the hair on the top of the thorax but should not be applied to the head, neck, wings, or on the sides of the thorax. The paint should be thin enough so that it can be applied easily and will not flake off on drying. If applied correctly, and in the right mixture, it will last during the life of the queen without causing her any harm.

The paint should not be applied in such quantity as to pile up unnecessarily on the thorax or allowed to run down the sides, over the spiracles, or onto the neck, or even around the bases of the wings. It is desirable to allow the pigment to dry slightly, thus permitting some of the odor to evaporate, before the queen is released on the comb. Sometimes bees take exception to the odors of certain paints, or to the temporary excitement of the queen and may start to ball her when she is released. One should watch the queen for a few moments to determine the reaction of the bees toward the queen before replacing the frame or putting aside the queen cage if she is being caged for shipment.

California



Shall We Line Breed?

by Leslie H. Little

There is a great difference of opinion on this subject, some breeders believing that a line cannot be maintained more than two or three years without too close inbreeding. Some are confused about the difference between line breeding and inbreeding.

I believe in order to prevent close inbreeding more than one line must be maintained—queen line and drone line—these cannot be bred in the same mating yard under natural mating conditions. Drones from the queen line must not be allowed to fly in such mating yards.

Before any two lines are crossed it must be determined if the sex alleles of the two lines are of the proper kind. This can only be done by testing or artificial insemination of the queen to be used for breeder queen, then she must be tested for hatchability. Any method used to test two lines together requires much time and very close observation of brood.

In line breeding of the queen line, I see no reason why a line cannot be maintained almost indefinitely—the same being true of the drone line or any other line.

It has been the general practice of most queen breeders to add new blood every two or three years, some more often. This, if done, should be added very carefully. If new blood is added to the queen line, the result

could be disastrous and the line could be lost completely.

The question of when, how, and where to add new blood is one I will not try to answer as this is a matter which should be left to those who have spent many years in the study of genetics. I feel that new blood should only be needed when the line being bred shows signs of deterioration.

Some of the older breeders maintained lines for many years and always had good bees. Perhaps they obtained stock from the original source, but just where that source is can be the \$64.00 question. I believe queen breeders have crossed lines which have resulted in deterioration of their stock and they knew something was wrong but failed to realize the cause.

Our breeding problems are not too much unlike that of other forms of life. Too many times we have overlooked the importance of the male. Livestock breeders realize this and no doubt this has resulted in the great improvement of our livestock, so maybe we have given too much thought to the mother and not to the father.

Livestock breeders have a great advantage over us for they can control the male while we can only do this by having isolated mating yards which in many areas is hard to do.

THIS has been a question for many years with queen breeders and it seems no one has been able to give any reason for not line breeding. Some breeders say it is not the thing to do while others have done it for many years with success.

It was my privilege to work ten years with the late John M. Davis, of Spring Hill, Tennessee, and I personally know line breeding was done in his apiaries and his bees were always good. He had practiced line breeding for fifty years previously without any deterioration in the strain. The only new blood I have any knowledge of ever being added was a breeder queen imported from Italy. This was done every ten years.

By using a very heavy population of drones in and around the mating yard the percentage of mismatings is small.

Space will not permit discussion in detail of the many problems of the queen breeder but may I say that the above is my own personal experience and belief. I do not expect all of you to agree with me.

However, I believe you will agree that we need to improve our present strains of bees. To do this, we should be willing to take the advice of those who have spent years in research work; those who have studied genetics and have found why certain things will work while others will not.

Whether we linebreed or inbreed,

too much of either could be very costly. Not many producers are trained in genetics or have the time to devote to this type of work. We can gain much by accepting the information passed on to us by proper authorities.

A smart man is one who knows how little he knows.

Tennessee



You and the Hybrid Bee

by G. H. Cale, Jr.

this synthesized bee of ours. These demands may well range from the reasonable to the absurd and it becomes the job of the bee breeder to sort and classify each demand as well as to attach to each demand its proper amount of importance from the standpoint of the overall program.

The problem is particularly complex because of the great variety of management systems applied to bees by the individual beekeepers. We may well illustrate this problem by a series of questions to you, the beekeeper. Do you want a bee that will take care of itself for "let alone management"? Do you not winter your bees and are therefore interested in package bees that will build up rapidly for the flow? Do you run two-queen colonies? Do you confine your bees to one hive body for a brood chamber? Do you winter your bees and have a relatively long build-up period before the honeyflow? Do you want a stingless bee? Do you want a bee for pollination purposes rather than for honey production?

All of these questions and many more may be asked. We have not even mentioned such traits as swarming and nonswarming, propolizing versus nonpropolizing, white cappings versus yellow cappings, resistance versus susceptibility, and many more. Our second demand, then, may be listed as follows: **WE MUST REALISTICALLY CLASSIFY THE MAJOR ECONOMIC CHARACTERISTICS WITH WHICH THE BREEDER MUST DEAL.**

Our next demand might well have been placed within the scope of the above subject matter. This demand

is so universal among American beekeepers, however, that it deserves some special mention in a category of its own. I am speaking now of a handicap which we as beekeepers impose upon the bee breeder in our demand for what we call Italian bees. There is no good evidence in the literature of the last seventy-five years to support our contention that the majority of the desirable characteristics are concentrated in the Italian race. In fact, the few well-done experiments on this subject have indicated quite the reverse to be true.

There are many highly desirable traits in the Caucasian and Carniolan bees some of which are found not at all, or only to a lesser extent in the Italian race. There are, in fact, other races than those mentioned above and we should not entirely ignore them in our search for desirable characteristics. Our last demand may now be listed as follows: **WE MUST KEEP OUR EYES UPON THE IMPORTANT GOALS INSTEAD OF THE UNIMPORTANT SIDE ISSUES.**

Now just what is a hybrid bee? We might well compare it to a house that is built from a multitude of materials. So it is with a hybrid bee. From one strain we get gentle temper, from another we borrow some traits responsible for high honey production, from still another we obtain a trait for prolific queens, and other traits are obtained from still more strains. The problem of the breeder is then to combine all of these traits into one highly desirable individual which we call a hybrid. Those readers who are aware of hybrid corn and hybrid chickens have had definite proof of the effectiveness of this type of breeding.

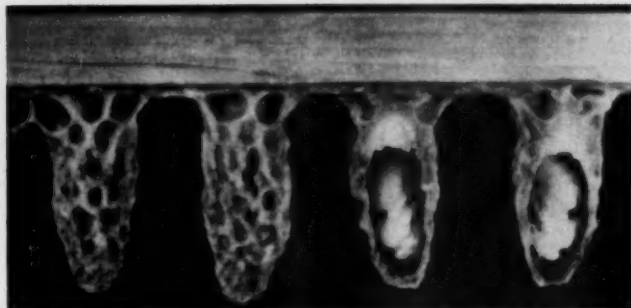
ONE of the first things to be considered is the problem of inheritance of the characteristics which we deem important from the standpoint of economics. In this respect we may be highly interested in the mode of inheritance of a characteristic such as disease susceptibility—since a knowledge of the inheritance of susceptibility may easily lead to the opposite, more desirable condition of resistance to disease.

Our knowledge of inheritance in the bee at the present time is very limited indeed. We actually know the mode of inheritance of only about ten different traits or characters. Only one of these known traits has any commercial importance, however all of them are of importance from the standpoint of a breeding program since they are easily visible traits that may be used to trace the inheritance of more desirable economic characteristics. We may list then the first demand to be considered in our bee breeding program: **WE MUST KNOW MORE ABOUT THE INHERITANCE OF IMPORTANT ECONOMIC CHARACTERISTICS.**

The next problem to be considered is a realistic classification of the economic characteristics which we as beekeepers feel to be important in

Producing Your Own Queens

by Dr. Harry H. Laidlaw



Well formed queen cells with an abundance of surplus food. (Photo by J. E. Eckert)

EVERY beekeeper, large or small, needs young queens each year to replace old ones which are unsatisfactory or have disappeared. The replacement queens may be purchased, as they frequently are, or the beekeeper may raise his own. Queen rearing is not unduly difficult and when few queens are needed it can be accomplished with little or no special equipment. The rearing of really fine queens, however, demands close attention to detail and adherence to certain basic principles.

The intrinsic worth of a queen bee stems mainly from two factors: one, her heredity make-up, and two, the environment in which she was raised. By rearing queens from stock which has a consistent record of desirable characteristics and good performance, and mating them to drones of similar stock not too closely related, the hereditary make-up is taken care of to the extent permitted by the stock. The beekeeper's efforts to produce outstanding queens cannot be relaxed with a wise choice of breeding stock, however, because even the best of stock will not give the best of queens unless the queens are reared in an optimum environment. The providing of this environment is the essential feature of good queen rearing.

As every beekeeper knows, both queen bees and worker bees originate from fertilized eggs. It may also be assumed that the embryological development in the egg is the same whether the egg was laid in a natural queen cell or a worker cell. The three-day period from the lay-

ing of the egg to its hatching is thus of minor importance to the queen breeder. On the other hand, the young larva upon hatching from the egg, is on the threshold of a most critical period and it may now develop along either of two paths—one leads to a worker, the other to a queen. During the next five or six days the quantity and possibly the composition of the food the larva receives will determine which path the larva takes, and, if it is to become a queen, how far it progresses toward becoming a full physical and physiological queen. This short feeding period then is of major importance to the queen breeder and the greater part of his efforts to produce better queens must be concentrated on making the environmental conditions during this period as near optimum as he possibly can. This means the full feeding period and not just the last two-thirds or three-fourths of it. Thus it is important that the larvae be fed abundantly from the time they hatch from the egg until the last food is eaten. Prior to grafting or otherwise preparing the larvae for the cell builders, the larvae should be fed in the cell builder itself or in special feeder colonies made up and maintained like cell builders unless the breeder colony is feeding the larvae very heavily from the moment of hatching.

The food of young larvae and larvae destined to become queens is royal jelly which is secreted by the pharyngeal glands of worker bees. These glands are usually developed



to the greatest extent in bees five to fifteen days old, and bees at this age are nurse bees. Nurse bees can draw to some extent upon their own body food reserves to secrete jelly, but to secrete jelly in large quantities the nurse bees must consume pollen and honey or syrup. It is apparent therefore that if the larvae are to be properly fed, the feeding or cell-building colony must have a great abundance of nurse bees with little brood to feed and ample stores easily accessible to the nurses. Furthermore, the nurses must be in a mood to build queen cells and they must be concentrated in the active cell-building area.

If these conditions are met, it makes little difference which queen-rearing method is used. For the beekeeper with few colonies the Miller method of procuring larvae and the one-story queenless cell builder is probably the best combination. If a greater number of cells are required, the Doolittle or grafting method of preparing the larvae or the Smith method (modified Alley method) may be used with equal success. The queen-right cell builder, the queenless cell builder, or the starter-finisher combination all are suitable for feeding cells prepared by these methods and are used by commercial queen breeders. Larvae or queen cells should never be shaken in handling, and all grafting or preparation of larvae for the cell builders should be done in a warm and humid room. In dry, cool, or windy weather, the larvae and the prepared cells should be protected by a cover or box between the preparation room and the colonies. Ripe cells nearly ready to emerge should be kept warm.



Vigor and Local Selection

by Charles Mraz

UNTIL lately, vigor and local selection of queens has been a sadly neglected phase of beekeeping. Many times, a beginner starting with bees has some local strain which by natural selection has adapted itself to local conditions with the result that his early venture in beekeeping is very successful. Flushed with this early success, he decides to requen his "black hybrids," to obtain some nice "Italian" bees and perhaps even greatly increase his holdings. After all, aren't "pure Italians" much better than the black, ugly hybrids? At least that is what the books say, and what beginner in beekeeping is going to question "The Books"?

The usual result in this drastic change of stock is all too often a disastrous one. If the beginner is lucky enough to get a good strain of bees, he perhaps will be able to keep going, but many times he finds

The queen is already developed by the time the cell is placed in the mating colony. While injury to the queen during the time she is in the nucleus cannot be ruled out, it is reasonable to assume that she is far less sensitive to less-than-optimum conditions than during the time she was becoming a queen. Nevertheless, the queen breeder should try to ensure a good environment for the young queen. The mating nucleus should be well stocked with bees of various ages and provision made for adequate food at all times. The young queen should be laying well ten to fifteen days after the cell was put in the nucleus and she is then ready for use.

California

his bees no longer winter well. They require constant feeding, no longer fill supers the way they should, develop disease more easily, supersede their queens, and a host of other troubles. The usual excuse for such disasters is to blame the weather. If bees don't winter well, it's been a hard winter; poor crops, well the seasons are poor, and so on. While these excuses may be true in some cases, more often the fault is with the new queens.

The best type of bees for any particular locality, without question, is bees that have been living in that locality for many generations to the point where, by natural selection, they are perfectly adapted to the winters, type of honeyflows, and disease conditions. Anyone fortunate enough to start with bees of this type should think a long time before killing off all these queens for some unknown strains. If anyone contemplates a change of stock, by all means first try them and compare them with local stock before making any drastic changes. It is rather too much to expect bees bred for conditions in a hot climate to do their best where short honeyflows and long, cold winters are the rule. This doesn't mean all queens from the South are not good in the North. If the breeding stock comes from bees hardy in the North, the daughters should and do prove very satisfactory in the North.

The object of this short discussion is to help the beekeeper realize the tremendous importance in the variation of different strains of bees. Too many beekeepers still judge a queen entirely by her looks and not by what she does. Too many beekeepers still do not realize the importance of selective breeding. It is surprising how many beekeepers still raise their queens from a haphazard collection of queen cells, regardless of the kind of stock these queen cells came from. One thing can be sure, queens raised from swarming cells are inclined to come from a strain of good swarmers. Of course if that is the kind of queen one wants, then that's the kind to raise.

Any beekeeper fortunate enough

to start with a good strain of native stock should by all means continue to raise queens from the best of this stock. Heredity being what it is, like begets like; to get the best, breed from the best.

Unfortunately it isn't all as simple as that. In my early days of queen rearing I soon realized there is such a thing as inbreeding, and inbreeding is a subject that can result in arguments far into the night. I know there are breeders that do inbreed and claim they do well. I suppose I'm just ignorant, or perhaps my bees are, but I never could inbreed and get away with it. With inbreeding, my stock would just fall to pieces, with a drastic loss of vigor.

One of the most desirable characteristics I want in bees besides local selection, is vigor and the only way I've ever had any luck in getting vigor in my stock is to prevent inbreeding. One way I try to do this is never to use the same breeder more than one year, and the following year, use another, unrelated to the one in the previous year. In addition, I make it a plan to buy outside queens and breed some from the best of these, to add new blood constantly.

It is true under such a program that the resulting queens will vary tremendously. This is not a drawback, after all if we don't have variation, how can we pick the best? It is true with inbreeding that you can get all the queens the same, but what's the use of having them all the same if they are all going to be poor quality? The many possible variations in crossbreeding (not necessarily between different races of bees) are like playing poker, it is quite a thrill to come up with some queens that make a full house.

There is no question that on an experimental basis, line breeding and inbreeding have their place, but the ordinary beekeeper, trying to make a living from honey production, should select breeding queens best adapted to local conditions, and maintain vigor by breeding the best to the best making certain they are not related.

Vermont



Races of Bees

by Dr. F. B. Paddock

Iowa State College, Ames, Iowa

BEES were not found in this country by the early settlers who came from Europe. The type of agriculture which they brought with them demanded bees for pollination purposes, so bees were shipped over within three years after the first landings, both at Plymouth Rock, Massachusetts, and at St. Augustine, Florida. The northern introduction was called the German black bee but, in reality, it was of Dutch origin for the early settlers provisioned their expedition in Holland. This bee was very hardy and did a good job of spreading westward from the Atlantic coast, although its spread was not as rapid as that of the southern stock. The southern stock was probably a descendant of some Mediterranean race.

But the literature on beekeeping originated along with the northern expansion so we inherited the term of "wild or black" bees. There is not a great deal of early history available but indications are that the times were pretty rugged, even for a good rugged type of bee. There was considerable difficulty with wintering conditions, with the bee moth, and, in due time, disease.

European foulbrood became quite a scourge to beekeepers and undoubtedly there was considerable American foulbrood. By the 1850's a definite need developed to do something to save the beekeeping industry. The Italian race of bees was finding its way into this country at that time and experience indicated the ability of the Italian bee to cope with the so-called European foulbrood disease situation. So there was a real need for the expansion of the Italian race in this country. Many direct importations were made and much effort was developed to supply the demand for Italian queens

with which to head colonies and rehabilitate the industry. In the early 1860's, there was formed at Des Moines, Iowa, the Italian Bee Company by two enterprising women, one of national beekeeping reputation, Mrs. Ellen S. Tupper. The object of this incorporated company was "To make available Italian queens for the improvement of the Beekeeping Industry." The fact is that the acceptance of the Italian bee was slow in spite of the imperative need for correcting the disease situation. The Italian race had to prove that it would produce a superior poundage crop over the wild, or black bee. Disease was not sufficient impetus to make the change-over.

It is said that importations were made direct and we are still carrying on with the Italian bee after 100 years. The fact is that continental students of beekeeping do not consider the bee with which we are now operating as the Italian bee. In their minds it is the American bee. They claim that the Italian stock has so been changed that it can no longer be called Italian in truth.

But why do we depend upon one race of bees? Commerce with other sources of bees did not seem to open up as easily as with Italy. In fact, commerce with south Russia was very difficult at any time and, of course, has been impossible for the last quarter century. We do know that the Caucasian strain of bees originating in south Russia and transported to this country has shown some very definite advantages. They are very hardy bees, provision their brood nest well for winter, take good care of their brood, are not so inclined to rob as the Italian bees, and, above all, they are easy to work with in temperatures at least 5 degrees lower than Italians can be worked. I was out the first of February examining some colonies and those containing Italian bees had their tails up and occasionally left a cluster in a desperate effort to sting. Those colonies containing Caucasian bees simply hovered tight, taking care of colony duties and not minding the intrusion. This charac-

teristic follows throughout the season. The Caucasian bee is less inclined to follow the operator about the yard making a nuisance of itself. It is much less inclined to rob which is a big factor in the spread of disease within an apiary.

Operators complain that the Caucasian bee swarms more readily. This, in my opinion, is an alibi for the shortcomings of the operator. If the Caucasians are frugal enough and industrious enough to build up a good colony which the beekeeper cannot take care of, it is not the fault of the bees but certainly the fault of the operator. Many very successful producers have used Caucasians for many years. I need only to refer to the extensive and profitable operations of Herman Rauchfuss in the Rocky Mountain region, a producer of section honey by the carload.

The Carniolan bee resembles, in many respects, the Caucasian bee. It probably was slow to get to this country because of the commercial relations with the country producing this bee, formerly known as Bohemia. The Carniolan bee is very gentle, it is very prolific, and provisions its brood nest well. It does swarm when the same principles of management are applied to it as are applied to Italians. But again, this bee has been developed with the use of large hives demanding a tremendous build-up. Why not take advantage of this natural resource in a race of bees and work accordingly for better honey production in the United States?

Is it logical that the beekeeper should depend on one race of bees for honey production under all conditions and all types of production throughout the United States? Is this done with any other line of plant or animal production? Aren't specific requirements met by the use of specific material—dairy cows for milk production, beef cows for meat production, and so on? It would be a thrilling experience to try some race of bees other than the so-called Italians and see if it isn't invigorating to learn how to handle them effectively and efficiently.



The Queen Breeder's Responsibility

by Sam E. Moore

A MAN by the name of Bacon once wrote—"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse but to weigh and consider." Please read the following article with this in mind.

A good queen has meant the difference between a honey crop and a failure so many times that QUALITY seems more important than ever. As everyone knows, good equipment, ideal conditions and proper management mean nothing, if the queen is not, as the expression goes, "up to snuff."

I am still of the opinion that most supersedure troubles, combined with European foulbrood, sacbrood, etc., can be eliminated by proper breeding programs and improvement in strains of bees. Now that pollination is becoming an important factor in the beekeeping industry, I believe the queen breeder has a responsibility in selecting his breeders with this in mind, and in the future it may be that we will have special strains of bees raised with pollination as an important objective. In the past years, from general observation, we do know that certain colonies accomplish more legume pollination than others in the same apiary which in turn would certainly set more seed for the seed grower.

The responsibilities of a queen breeder are numerous, maybe more so than most beekeepers realize. The first, and I believe, most important, is honesty to customers. A

breeder should not ship queens that are not produced to the best of his ability; therefore, he must also be honest with himself. I suggest, when instructing help in catching queens for shipment, that they put themselves in the position of the person buying the queens. If they find a queen that does not seem to be laying properly, or if there is any doubt in their mind that she is not a quality queen, she must be eliminated or left to be checked later.

Perhaps I should explain what is meant by a top quality queen and the requirements of a good queen. Most honey producers probably already know this too well. The most important quality is industry or honey producing abilities. To achieve this, queens must be prolific, which means capable of building strong colonies, a good brood pattern, compact brood nest and good viability. The next requirement is gentleness, this means quiet on the combs, unexcitable, and above all—not fighters. One does not need mean bees to produce a crop of honey and it is so much nicer to work with a gentle strain. Life on this earth is short, and the more pleasant it can be, the more we derive from it. It is also important that the bees be good wax workers, and breeders should be selected for wintering abilities and nonswarming qualities. Longevity is also important as are many other factors too numerous to mention here.

It is the responsibility of the queen breeder to educate himself in the best methods of raising cells, new improvements in producing queens, and breeding procedures. Genetics is a very important factor in breeding strains to eliminate the undesirable characteristics and strengthen the desirable ones. The qualities of the drones in the area of the mating yards is an important item that is overlooked too many times. It is sometimes hard to control this one hundred per cent but if there are plenty of the proper aged, suitable drones that have been raised intentionally in strong colonies in

the mating yards, the chances are much greater that desirable matings will be obtained. One should realize that fifty per cent of the characteristics of the bees in a colony are inherited from the drone that mated with the queen of that colony. It is the breeder's responsibility to select drone mothers with the same carefulness that he selects a breeder queen from which he raises daughters.

I have been doing something that I believe is very practical—that is to contact honey producers in different areas to which I have shipped queens that have been outstanding in production for a year or more. We have made several tours into Canada and to various states where these apiaries are operated to select these outstanding queens, and since the only way to accomplish this is to make the selection myself, it does provide an excellent excuse for a nice vacation throughout the country. I use some of these selected queens for breeders of drone mothers and some to raise daughters to ship in the coming season.

It is my opinion that queen rearing is a special phase of the beekeeping industry and requires many years of experience and study. It is an art not achieved without many disappointments and if a lifetime were spent at it the surface would only be scratched as there is so much room for advancement. Even the best of queen breeders will fail sometimes due to weather conditions and factors he cannot control. However, I assure you it is a great satisfaction for a customer to say "you know those last queens you shipped me were the best I ever had." I would like to quote the first line of the preface in the book "Queen Rearing" written by Harry J. Laidlaw, Jr. and J. E. Eckert, two very good friends of mine, and published by Dadant & Sons. It says: "Queens are the foundation of the beekeeping industry and, things being equal, the better the queen the greater will be the return in pleasure and profit."

California.

The Breeder's Problems

by N. C. Jensen

IN spring both old and new problems confront the queen breeder.

Preparations were begun last summer and fall. Results, good or bad, were reviewed, and plans made for changes for improvement so that better bees and queens would result.

The addition of potential breeding queens to those carried over and already tested for desirable characteristics insures a dependable source of larvae of the quality and quantity needed. Maintaining breeding stock and the ability to perpetuate desired qualities in succeeding generations is difficult and involves much thought and work. Many queens selected do not reproduce themselves well and have to be eliminated even though their progeny have indications of purity and uniformity.

In any breeding program, certain characteristics are considered above others, are constantly sought after, and efforts are made to maintain and improve these good qualities. By persistently using only the best breeding queens and using equal care in the selection of drone mothers; referring to records of parental lineage to maintain at least one generation distance between the lines crossed to prevent inbreeding and consequent degeneration; selective breeding carried to maximum possibilities will assure the production of high quality queens.

High production of honey is always associated with large populations. However, colonies of medium numbers have been known to store more honey than stronger colonies in the same yards. Generally speaking, however, prolific queens are desirable, and in addition to the ability to lay many eggs, these eggs must be highly viable so the brood pattern will be uniform.

Longevity of both queen and worker bees is desirable, and this is in a large measure attributable to good queen-rearing methods. Longevity is highly important in building and maintaining colony strength during long honeyflows. Some queens will lay heavily for a short time and then become mediocre layers, indicating something wrong in their make-up, resulting in the failure of the colony to produce. If

environmental conditions and proper proportions of food elements such as proteins and carbohydrates had been supplied during the larval stages of the queen cells, such conditions might not have developed and the queens might have been perfect specimens.

Cell-building colonies and their proper operation constitute a basic factor in the process of queen rearing. It must be remembered that the queen is the most important personage in all beedom and, so that she may possess all of the physical qualities inherent to her life and work, there must be close coordination in tissue-building elements and in environmental conditions even before the egg hatches. Cell builders must be maintained at optimum morale at all times with all the activities conducive to brood rearing as near right as possible.

When all normal colony requirements are met as nearly as it is possible to do so, and regular intermittent manipulation of brood combs through the exchange of combs of eggs and young larvae from below the excluders with the combs of maturing brood from above, perfectly good queen cells will result. It is during the early larval stages that development of physical structure and characteristics take place. Any deficiencies or unfavorable conditions existing from the time the egg hatches until the queen cell is nearly ready to be sealed, can harmfully affect the young queen.

Inefficient operation and inadequate attention to cell builders, lack of knowledge of bee behavior and colony morale, probably contribute to the production of more poor queens than all other causes.

In the establishment of nuclei for mating where the operation involves many items, plenty of problems are present. Maintaining this special equipment in good repair and at top efficiency is a problem. Suitable locations for mating yards are not plentiful. The establishing and maintaining of several hundred nuclei, and the spacing of yards to isolate different stocks from mating ranges of others is difficult.



Systematic and periodic manipulation of nuclei is a "must" and the breeder should stick close to his schedule.

In natural mating, weather plays a decisive role. All operations must be based on the assumption that conditions can change suddenly for the worse, and allowances must be made so the effects are not disastrous.

In checking nuclei, there is more to be noted than just looking for queens and caging them, and coming back to introduce cells for succeeding queens. Suitable organization is more difficult to maintain in nuclei than in normal colonies, and the skill required to master this comes only from experience and willingness to supply what is necessary when it is needed, and not later. Nuclei, short of the elements necessary in full colonies, will not stay populated with enough bees to keep themselves up or to provide the favorable conditions that should surround the young queen in what is, in reality, temporary quarters. Because of these less stable conditions, and the disturbances which nuclei are subjected to, it is important that honey and pollen supplies be adequate all the time, and feeding done when necessary.

Caging queens and preparing them for shipment may not appear to require much skill, but there are angles that are important and space will not permit going into all of them. It is sufficient to say that air mail has made possible the distribution of bees to countries where rehabilitation of apiaries would not otherwise have been possible.

Mississippi



Dr. Knowlton, Utah State Agricultural College, used this emblem on a cloth badge for those attending the alfalfa seed production short course in Salt Lake City in February. The badge was an inexpensive cotton ribbon from Fred Wilmarth makers in Oklahoma City. In this short course about 25% of the program dealt with pollinators, pollination and beekeeping.



One of the features of the Ontario Beekeepers' Association meeting last December was the presentation of a traveling bag, by Mr. H. C. Allen, president, to their grand old man of beekeeping, Mr. H. G. Sibbald. Mr. Sibbald is 82 years young. He joined the Association at the age of 20, became president at 35, and was the first to serve for two years. He has attended 62 annual meetings without missing a single one. Alvin Anderson, Pres.



W. B. Chamberlin, Poplar, Wisconsin, must like Bill Wicht, of Hattiesburg, Mississippi, because he sends so many pictures of him. What we like about this picture is the sweep of the rows of nucs on that piece of flat ground. One wonders how far those lines extend to the left. It takes a well devised and plentiful outfit to maintain a queen rearing establishment. Just read what the boys say in this month's Round-up.



Dr. Erwin Muller, Guttaring, Austria, sends this picture of his wife gazing up at rows of peasant hives in Carinthia. How would a poor queen find her way back home? It would tax her memory, like that of a slightly inebriated gentleman trying to find the right front in a block of Baltimore houses. Then, too, a wind would move hive population here in all directions.



Mrs. Clarence F. Cox, Enderlin, N. Dak., sends us this picture of her husband and a young man he helped start in the bee business, Vernon Furtney. This is typical of so many beekeepers who lend a hand to the youngsters who are often, like Vernon, keeping bees to earn enough for a college education. Here the two of them are examining a frame for queen cells.

Descriptions and Habits of the Adults of Some Moths Whose Larvae Infest Combs of Honey Bees*

by Dr. V. G. Milum

(Note—The paragraph numbers correspond to the numbers for the same species respectively in the photograph of the adults and pupae.)

1. Greater wax moth, *Galleria mellonella* (L.). (Wax moth is the approved common name, but it does not distinguish from others.)—(5/16-3/4; 1 1/4.) (The first two numbers represent variable size in length of the adults in inches from front of head to tip of wings when folded, depending upon the abundance of larval food; the latter figure is the width from tip to tip of expanded front wings of normal sized adults.) The outer wings are mottled, brown to purplish; silver gray with fraying; underwings creamy white. Front two-thirds of outer wings are folded at a sharp angle downward giving a boat-shaped appearance. Head is light gray to light brown. Female has two short prominent pointed palps on front of head. Outer margins of forewings of male are deeply scalloped and fringed.

2. Lesser wax moth, *Achroia grisella* Fabr.—(3/16-1/2; 13/16) Solid silver gray to buff colored body and wings, folded flatly at rest, overlapping slightly at tip; head is distinctly orange-yellow. Males may be distinguished by

smaller size and more nervous activity with fanning of wings, larger females by their tucking eggs in cracks, crevices and debris.

3. Indian meal moth, *Plodia interpunctella* (Hbn.)—(7/32-1/2; 4/5) The front or base of the forewing of newly emerged adults is silver gray, separated by a narrow, slightly curved black band from the tip half which is reddish brown with patches of black mottling, with gray fringe at the tip. Underwings are grayish white; head and thorax are reddish brown. Frayed adults have a faint reddish brown color. Adults fly at night or in faint light. Mating activities are easily observed in cultures, with egg laying as early as 8 hours thereafter, the number per female varying from 40 to 350 according to others, this writer noting average of 86 (71, 80, 93, 101). The small, nearly round, white eggs may be deposited in clusters on or in the food material, but are more often dropped promiscuously, not in cracks or crevices.

4. Almond moth, *Ephestia cautella* (Walk.)—(7/32-3/8; 5/8) The general color is light brownish to dark gray with the transverse zigzag lines of the wings similar in position but less distinct than those

of the Mediterranean flour moth, soon becoming indistinguishable by fraying. Although the adults are night fliers, they are especially active in cultures with mating readily observable. The small, rough, elliptical eggs, usually from 100-150, with a high of 233 for one female, are commonly scattered over the surface of the food, with no particular attempt to deposit in cracks and crevices.

5. *Vitula edmandsii* (Pack.) (no common name)—This species is a common pest of bumblebee nests, sometimes of honey-bee combs. Adults are similar in size, and wing pattern color to those of the Mediterranean flour moth and a western species, the dried-fruit moth, *Vitula serratilineella* Rag., whose larvae have only once been reported as infesting honey-bee combs.

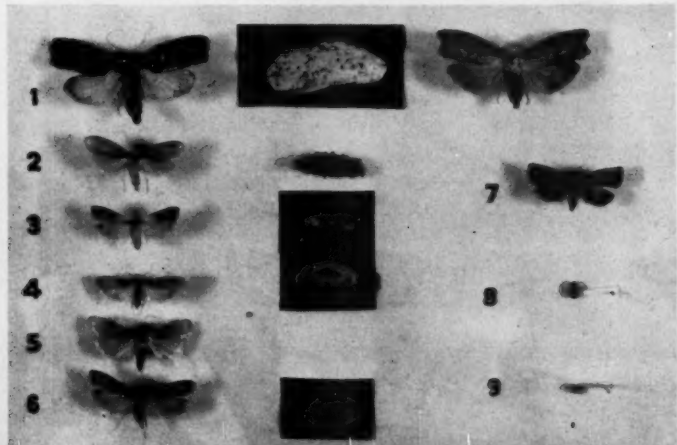
6. Mediterranean flour moth, *Ephestia kuehniella* Zell.—(1/4-1/2; 1/2) The general color of the dorsal surface of the front wing is light gray, with two transverse narrow zigzag or wavy darker lines, the first about one-third back from the base is more prominent, the other one-third from the tip is less distinct. Identification is easily confused with that of both species of *Vitula* listed under 5.

Aphomia sociella L. This species of moth has been reported as a common pest of bumblebee nests in Europe and as an occasional pest of honey-bee combs. It was found in Massachusetts in 1923, but the only known specimens in this country are now safely impaled on museum pins in the U. S. National Museum. Since it is not likely to be encountered, its description is omitted. (See G1. Bee Culture, July-Aug., 1940).

* Contribution from the Entomological Laboratories of the University of Illinois.

The Webbing Clothes Moth, *Tineola bisselliella* (Hum.)—Not included in the above listing of moths whose larvae may infest honey-bee combs is the webbing clothes moth, *Tineola bisselliella* (Hum.), which the author reared from combs containing dead bees and pollen, the determination having been made by the U. S. National Museum.

Adults and pupae of some honey bee comb infesting insects.—1. Female, pupa, and male of greater wax moth. 2. Adult and pupa of lesser wax moth. 3. Adult and pupa of Indian meal moth. 4. Adult and pupa of almond moth. 5. Adult of *Vitula edmandsii*. 6. Adult and pupa of Mediterranean flour moth. 7. Adult of codling moth (larvae may crawl into hives for pupation, no injury to comb.) 8. A Dermestid beetle whose larvae feed on dead bees or brood and pollen. 9. Adult of the bee louse whose larvae tunnel in cappings. (Actual size about one-fourth larger.)



Honey Succeeds

American Honey Institute

Madison, Wisconsin

A former office girl at the American Honey Institute, Caryl Vetter, left her position about two years ago in favor of marriage. But she keeps us posted on her new family. This was her most remarkable discovery about homemaking:

After talking and thinking honey for the years she worked at the Institute, she found that she could not get along without using honey in the home. Besides having a tremendous amount of fun trying out all the Institute recipes she had sent to others for so many years, she found that honey came in handy as a baby-silencer, too.

"My baby cried and fussed and whimpered until I didn't know what to do," she wrote. "Then a pediatrician suggested using honey. You'd be amazed at the difference in her temperament now. She's just as happy and content as can be. And to think that honey made the difference!"

We keep tucked back in the recesses of our mind a story, true, of course, of the retired business man

who decided to try his hand at beekeeping. Every once in a while, when the going looks rough, we haul it out for re-examination and a mental lift.

This is how the story goes: One bright and sunny day a 60 year old man came to the Institute office. How, he wanted to know, could he start in the business of bees?

We gave him the names of our member bee industries, told him of our own organization and the promotional work we were doing, suggested people he might see who would be willing to tip him off on the way to start a bee business, and gave him samples of our honey recipe books, so that "his wife might learn just why honey is produced in the first place."

Then off he went. Except for his yearly letters bearing his membership dues, we heard no more from him. But one day in walked our beekeeper friend, ten years older by the calendar, but many years younger in spirit. For his budding business had boomed.

So well had the beekeeping business paid off for him that he owned

his own new truck, was thinking of buying another, had to hire extra help to assist him with his bees, had enlarged his apiary to triple the number of hives he had started with, and had generally prospered.

Beekeeping paid off in a big way for him. This is what he did:

Erasing from his memory the fact that he was already 60 years old, he had started out with all the enthusiasm and energy of a 25 year old. He set up his apiary on a small farm, five miles out of a little town. He tended his bees to the best of his ability, used only sanitary, cleanly methods of processing his honey, and took great pains to bottle and package it attractively.

Then off he went to town in a rented truck. He called personally on every honey retailer in his town, even hit the bakeries. He showed his wares, offered to set up displays of honey for the merchant. Not content to let it go at that, he went on down the road to the next town and the next and the next, until he reached a large city some 100 miles distant from home. He was gone for about two weeks.

The first year he had accomplished what he hoped to do—he had got his foot in the door of the honey market. The next year was easier. Merchants remembered his high quality honey, wanted to repeat their orders. As the years went on, demand for his honey so increased that our beekeeper had to expand. But regardless of how busy he became, he never failed to make these personal calls on his customers.

Today at the age of 70 he has a thriving business.

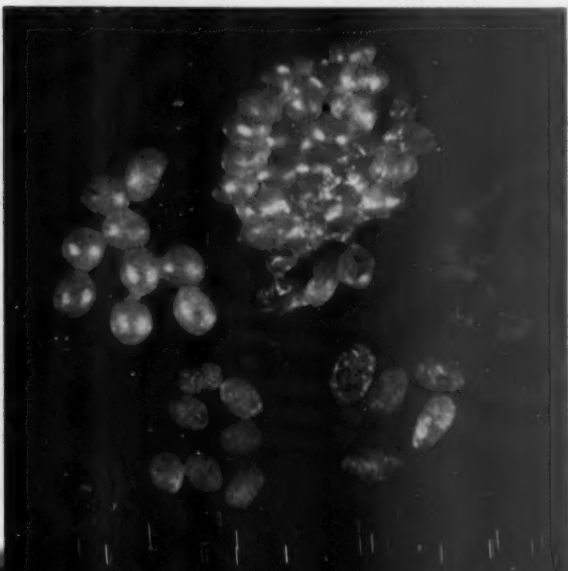
Bee Magazine for Brazil . . .

Volume 1, Number 1 of a new beekeeping magazine, the first of its kind in Brazil, is the result of several years planning. "Brasil Apicola" has been founded and is being directed by Dr. Edgard Viera Cardoso.

(The first issue presents a good layout with an attractive cover.) Subscription price is \$3.00 and the address is Rua Silveira Martins, 108 Sao Paulo, Brazil.

Eggs of five moths whose larvae are known to infest combs of honey bees. Upper left—greater wax moth; top center—lesser wax moth; right center—Indian meal moth; lower right—Mediterranean flour moth; lower left—almond moth. (Enlarged about 7 times.)

Character and habits of moth larvae will be described in an article by the same author in May.



The Beekeeper Who Cheated Death

by Robert M. Mead

Clyde Wood as he is today, hale and hearty and working every day, long years after his experience with an "incurable" disease. This picture is of interest for other items also. Note the wheelbarrow, welded in Clyde's own shop for use especially in the bee yard. Clyde made the bee and clover decoration on the honey house himself. There is a bee cellar under the honey house where Clyde has wintered bees with almost 100% success for years. This is an unusually neat little house and sales stand for a small outfit, about 45 colonies.



OCCASIONALLY there are stories that should be told for the good of mankind in general but are not told simply because most publishers are afraid to touch them. This is one of those stories; a story of a man who recovered from an incurable disease and who feels that somewhere in his experience there may be help for many others. To date, Clyde Wood, of South Woodstock, Vermont, has been able to tell his experiences only to those with whom he comes in contact. He has written his story but it was turned down on the basis that some group among the medical profession might be offended. Therefore, I would like to make it clear that in telling his story here, I am not peddling anything, not advertising anything, and not claiming anything, nor am I pushing the services of any one

branch of the medical profession ahead of the services of another.

Clyde runs a small garage out South Woodstock way and keeps about forty swarms of bees so efficiently that he is easily rated as one of Vermont's best beekeepers. Fourteen years ago he faced the prospect of soon becoming just a few letters on a headstone in some cemetery, so his success today is not just the usual story but a modern miracle. There is one difficulty, to find the clue that would tell what has made the miracle possible so that others might benefit by it.

Clyde's difficulties began with some bunches growing at the base of his neck. He decided that these would have to be removed but at first did not realize the seriousness of his situation. He went to hospital number one, had an opera-

tion that removed one of the offending growths but all he got in answer to his questions about the nature of the disease was a lot of disturbing silence. After some time and considerable argument the doctor reluctantly told him that he had Hodgkin's disease, that it was fatal in its effects, and that at best he had only a few more years to live during which time he would probably grow progressively ill. (Hodgkin's disease, to put it bluntly, is cancer of the lymphatic glands.)

Clyde had some X-ray treatments at number one hospital but eventually went to number two to have them check up on number one's findings. They confirmed the diagnosis of Hodgkin's disease so if there is any question about what Clyde did have, we have the word of two institutions that it was the real thing.



At this time Clyde was fairly desperate. He was forty years old, had a family and of course was just as anxious to live as the next man. He was willing to try anything and the doctors could not give him any hope. At this time he made a trip to Ohio where he visited a chiropractic clinic and had many examinations and one adjustment. I mention this because it is part of the picture that in all fairness has to be told along with the rest of it.

Returning home, Clyde left most of the garage business to a helper while he managed the few bees he had at the time, getting stung enough so that he knew what it was all about. Also along about the same time he began eating large quantities of honey. During the same year that he was working with the bees and eating honey he began to notice

an improvement in his condition. At that time it could not have been called a cure but today, about twelve years later, as he is in good health for a man of his age and free from growths, it would seem that even the most pessimistic medical man would have to admit that in Clyde's case Hodgkin's disease took a licking.

I want to make it perfectly clear that neither Clyde nor the writer knows where the secret lies. All we know is that there was a cure, where no cure was expected, and that whether by coincidence or by intent it came when Clyde was rather well mixed up with both bees and honey. There are hundreds of questions that immediately arise. Where was the turning point and most important, why? Was the honey a factor? Was the bee venom a factor? Or was it some treatment that he had and if

so why is it not in use today? People all over the country still die tragic and hopeless deaths from Hodgkin's disease.

Today Clyde is not only very happy to be alive but also believes that he has a mission in life of helping others with this disease if it is possible to do so. I am sure he will be willing to give any reasonable cooperation to any sincere doctor or research group that might help in finding out just what worked the miracle.

(In an effort to present this material in as inoffensive a manner as possible, names of doctors, hospitals and institutions have been intentionally omitted. Clyde can furnish any proof that is needed including names, dates and places not included in this story.)

Vermont



California Teaches Apiary Inspection

∴ Poly Vue ∴

by W. R. Koenig

CALIFORNIA State Polytechnic College, San Dimas, is the only school in United States that teaches agriculture inspection as a major course. Under the department the following major fields are covered: Plant Quarantine and Nursery Stock Inspection, Fruit, Nut, Vegetable, Egg and Honey Standardization, Field and Orchard Inspection and Plant Pest Control, Rodent and Weed Control, Apiary Inspection and Seed Inspection. All of these subjects are taught under the able direction of Mr. E. Appel and Mr. K. Hobbs.

As every native Californian knows, the state enforces a strict regulation on all agricultural commodities grown and shipped, not only into California but also interstate shipments are closely inspected for fraud and deception for the public's welfare. One reason the state has border inspection or quarantine inspection is to control important diseases and insect pests that enter the state and might destroy vast acres of agricultural crops. The purpose of the school is to educate inspectors to help protect the people of California from inferior commodities.

After a four-year degree course at Cal Poly, the agriculture inspection student is ready to enter any one of the fields mentioned for extensive training for the county, state or federal government. In addition

he must also pass tests given by the county or state for each representative field he chooses to participate in. The practical training the student may receive at Cal Poly is indispensable to the future interest in his lifework.

Poly Vue is an annual affair presented by the students in the various departments of the school, with each department exhibiting what has been accomplished during the past year's progress.

The student excels not only in working for an education but in the ability to set up and display his talents in an agricultural exhibit.

Last year each department, with its individual subject classification, participated in one of the finest school fairs in the country.

The agriculture inspection department selected as their theme, "Farm to the Home." In this theme the students incorporated the fields of quarantine, fruit, nut, vegetable and honey standardization, rodent and weed control, and apiary inspection in respect to the way the California Agriculture Code functions, to protect the housewife in selecting her agriculture commodities for quality.

Apiary Inspection Represented

Along with other important features of the agriculture code, the apiary exhibit and demonstration proved to be outstanding in color as well as in educational value.

The display, as seen in the picture, presented different types of honey and showed the decline of American foulbrood from 1925 to 1949. The field milk test for determining American foulbrood and two actual stages of the disease were represented in a vial. These and many other phases in relation to apiculture inspection and management are taught at the college.

One of the important features the administration has set forth in the college curriculum has been the organization of field trips conducted by the instructors themselves at Cal Poly. These trips are made possible so that the student may see different products being manufactured, as well as being used on the college campus. Usually, a commercial company is selected to represent the subject taught. In apiculture, it was a great privilege and pleasure during Poly Vue festivities to have as our guest Mr. Herman Lundvatter, representing the Superior Honey Company of Los Angeles. He demonstrated to the student body and the public the latest types of beekeeping equipment manufactured for large and small bee raisers. In the future, the apiculture classes will visit the Superior Honey Company to see Mr. T. Hurd, who will conduct a special tour through the plant showing the students one of the best methods of processing honey for commercial trade.



Lathyrus tuberosus makes thick vine growth full of rose colored flowers.

From the Honey Plant Test Gardens

by Melvin A. Pellett



So many bees were on the flowers of this *Salvia pratensis*, Janet had to look before she sat.

HERE in the gardens we have a large variety of spring flowers which contribute nectar or pollen to the early spring build-up. We note the Siberian squill which grows on our lawn edges, one of the first spring flowers which bees visit freely. A succession of wild flowers in the grove furnish their bit of nectar. The waterleaf blooms later in the spring in sufficient quantity to make the bees really hum on it. Dandelion is common here, following early fruit bloom.

Among our early blooming shrubs are Tartarian honeysuckle, buffalo berry, Japanese quince and redbud. A larger number will bloom in later May and June. So it seems in the honey plant gardens we have a complete succession of early bloom.

Meadow Sage

Meadow sage (*Salvia pratensis*) is one of the spring plants most heavily worked by bees. It blooms freely for a period of two to three weeks beginning in May and usually lasting into June. When the picture shown here was taken last May, both honey bees and large, black bumblebees were so numerous around the flowers that our youngest daughter, Janet, was cautious about making the pose.

We have nearly an acre of meadow sage. The plants were first set out in rows and cultivated the first season. Once established, they take care of themselves and have thickened from self seeding. We have sown white Dutch clover with the sage. We now give the plot no care other than mowing a scattering of all weeds above the mead-

ow sage. The plant grows close to the ground except in the blooming stage when the flowering stems reach a height of two feet. The bloom of bluish purple flowers in mass makes quite a show. Blooming in the spring before many garden flowers are out, it attracts considerable attention, and each year we are impressed with the vigorous bee activity on this plant. It follows dandelion and blooms ahead of white clover at a time when added nectar is important. Hardy and of easy culture, it also has ornamental qualities which are attracting interest.

Thornless, Podless Honey Locust

Growing near our back door is a honey locust which is growing into a nice shade tree. It has neither pods nor thorns, thus overcoming both of the common objections to the use of honey locust for shade trees. It is adapted to a wide range of climate and grows easily, preferring rich and relatively moist soils. Its spreading branches and small leaves do not make a dense shade. The thornless variety is apparently an unusual sport with no thorns nor seed pods. Our specimen has been here several years. Earlier it was dwarfed by a large elm and a large mulberry but since the larger trees were taken out, the honey locust is making good growth. It blooms late in the spring and the bees swarm over it for a few days. The bloom is of too short duration to be considered often as a source of surplus. This is true of many of the earlier nectar sources.

Tuberous Vetchling

A plot of tuberous vetchling (*Lathyrus tuberosus*) in the second season was covered with ornamental, rose-colored flowers and bloomed through most of the summer beginning the middle of June and continuing through the third week of August. Honey bees visited the flowers much of the time, so apparently this is a good plant. This vetchling is a perennial legume which makes a thick, viny, climbing or trailing growth to four feet in length. It is an old-world plant which is known for the small tubers on the roots which, the references state, are edible and have been used for food. The plant has become naturalized in a few places in North America. It spreads by underground roots, which may make it valuable for roadside and gully erosion control. A report from Canada indicates this lathyrus to be a good honey plant as well as valuable for planting between the trees in orchards, where it adds nitrogen to the soil and smothers out weeds.

Our small plot was planted in late fall of 1949. The seed is very hard and should be fall planted for the winter freezing and thawing to crack the hulls. The plant did not establish quickly, although there was a little bloom and a few seeds the first season (1950). Last season it was better established and we were impressed by the long show of bloom and the bees working it. It appears this plant has possibilities for erosion control, and possible for livestock forage or wildlife conservation. This is one of the plants we will be watching for further developments.

Why Use Honey?

(Continued from March)

When there is a thickening of the normal secretion in the nose and throat in human individuals it is necessary to check up the protein content of the daily food intake in order to learn whether it is too high. Potassium found in honey is used to thin the secretion. Apple cider vinegar is also used because in nature potassium is associated with an acid. Two teaspoonfuls of honey and two teaspoonfuls of apple cider vinegar are added to a glass of water at each meal. The contents of the glass are sipped during the meal so that when the meal is finished the contents of the glass will have been taken. If it is not convenient to take this honey and apple cider vinegar mixture at meal time it may be taken at other suitable time between meals such as night and morning.

Study your daily intake of protein food represented by nuts, peas, beans, milk, cheese, eggs, fish, seafood, poultry, beef, lamb, pork, ham, liver, kidneys, and tripe in order to learn whether your daily intake of protein is too great. If you find that it is, then lower it fifty per cent or more if necessary in order to remove the cause of the thickening of mucus in your nose and throat. Raise the carbohydrate portion of your daily food intake by taking two or more teaspoonfuls of honey at each meal. This will, in a measure, balance your protein intake.

As a result of this observation a new framework within which to carry on medical reasoning was developed. When the mucous secretion in the nose, throat, or bronchial tubes changed in character and became thickened, one's attention turned to the amount of the daily protein intake. If the daily intake of protein food is found to be high it is lowered fifty per cent. At the same time one turns to the daily use of honey in order to thin the secretion and to increase the intake of carbohydrate.

While studying two herds of dairy cows it was observed that paralysis of the legs of a dairy cow frequently appeared following the birth of a

calf. When paralysis did appear the farmer sent for the veterinary who gave the cow calcium gluconate in a vein with recovery from paralysis taking place in a few hours' time. From this observation it was evident that muscle paralysis was related to the behavior of calcium in the body. Turning to contact with human beings presenting muscle trouble it was not practical to give calcium gluconate in the vein so ways were sought in which blood calcium could be raised in the human body by simple measures.

Blood studies showed that honey taken by mouth raises the blood calcium. With this knowledge at hand a study of muscle behavior was made when honey was taken by mouth. It was learned that twitching of the muscle of the eyelids and corner of the mouth disappeared in a few days when two teaspoonfuls of honey was taken at each meal. If honey is taken each day the muscle twitching does not return. It was learned that cramps in the muscles of the legs and feet which most often appear during the night disappear in a few days' time when two teaspoonfuls of honey is taken at each meal. If the honey is taken each day the muscle cramps generally do not return. Honey also improves the action of the heart muscle as shown by lessened heart pain if it has been frequently present. A sudden appearance of mild double vision which continues to be present generally disappears in a few weeks' time if two teaspoonfuls of honey is taken at each meal.

These observations resulted in the development of a ninth new framework within which to carry on medical reasoning. When the condition present represents a disturbance of muscle function the indication is to prescribe honey at each meal in order to raise and maintain the blood calcium.

While carrying on work in the garden, I learned the value of trace minerals in the soil in bringing a plant to full maturity and enabling

it to show evidence of good health. I had much better success in growing begonia plants when I added trace minerals to the soil. One teaspoonful of trace minerals purchased in powdered form was added to a gallon of water and this solution was poured over the soil surrounding each begonia plant. The result was a profusion of large blossoms and an increased size of leaf and height of plant. In growing lilies in the garden, the addition of trace minerals to the soil made the difference between ordinary results and an outstanding success.

Turning to contact with patients in the day's work, the thought came that like plants in the garden these patients might also be lacking in trace minerals in the daily food intake. This could be true because the so-called American diet is one low in mineral content.

As a source of these trace minerals I turned to honey which derives its greatest mineral content from plants. The ultimate mineral source of plants is the soil in which they grow. Honey, according to literature relating to its mineral content, contains potassium, chlorine, sulfur, calcium, sodium, phosphorus, magnesium, silica, iron, manganese, and copper. These are in minute amounts with potassium in the largest amount. Mother Nature seems to believe in a law of the minimum, believing if the human body receives a minimum amount of that which it needs it will function perfectly. Then, too, Mother Nature always shoots a shotgun. She never shoots a rifle. This accounts for the association together of these various minerals in small amounts.

When I prescribed honey as a source of trace minerals I observed in patients clinical results paralleling those observed in plants. The vitamins when prescribed with honey were more effective. There was improvement in tissue and secretion behavior.

(To be concluded in May)

The Beekeeping Industry Research Foundation

by Edw. A. Wolfe

FOR the past many months, it has been the thought of several within our industry that we should have a research foundation of our own. The thinking back of this was that such a foundation, properly supported, would be in a position to select industry problems that were worthy of serious consideration, select the institution or agency to carry on the technical research, pay part or all of the costs, and be in a position to administer such projects.

At the meeting of the Executive Committee of the Federation, in October, 1951, it was decided there was a need for such an organization, and preliminary steps were taken to make the Foundation possible. Corporate charter was received from the Secretary of State of Iowa in February which authorizes the organization to transact business as a corporation with a Board of Trustees comprised of Chas. C. Hansen, Donna, Texas; John G. Jessup, Perry, Iowa; Wm. W. Wicht, Hattiesburg, Mississippi; Newman I. Lyle, Sheldon, Iowa; and Edw. A. Wolfe, Atlantic, Iowa. Officers for the present year are Chas. C. Hansen, President; John G. Jessup, Vice-President; and Edw. A. Wolfe, Secretary-treasurer.

The objectives were designed to be as broad as possible:

1. To maintain an office for the supervision of research and scientific study of beekeeping and related fields.
2. To promote research and scientific study of the uses of honey as a food, and additional new uses of

honey and other products of the hive.

3. To promote research in the use of bees in the production of agricultural crops.
4. To promote research in the art of beekeeping, breeding, treatment of diseases of bees.
5. To promote educational programs for the dissemination of knowledge about the relationship of bees to the public welfare.
6. To receive contributions from any source to provide funds for carrying on these studies.
7. To cooperate with various agencies in carrying on research.
8. To provide funds for the carrying out of the research.
9. To promote research in the use of insecticides, fungicides, herbicides, fertilizers, and other materials as they may affect keeping bees.
10. To carry on a study of plants that furnish nectar and pollen.
11. To promote study of the production and use of fruits, seeds, and fibers produced as a result of pollination by bees.
12. To contribute funds for research by organization or individuals in carrying out the corporate objectives.
13. To secure and hold copyrights of books, periodicals, and pamphlets and to publish and distribute books and literature with reference to the study being promoted.

This corporation is organized exclusively for charitable, agricultural, scientific, and educational purposes as a non-profit corporation,

and the Board of Trustees has the power to appoint such officers as are necessary, to make rules, regulations, and by-laws, and generally to exercise all the powers of the corporation. The Trustees of the Foundation have the authority to make contracts, and do all other things incident to such an organization, either by purchase, lease, gift, or devise as may be found necessary in the proper conduct of its business.

At a recent meeting of the Trustees in Dallas, it was decided that first consideration would be given to a nutritional study of honey as a food, with particular emphasis on honey as a food for infants. Although honey is one of the oldest foods known to man, comparatively little is known about it from a nutritional standpoint. We, as beekeepers, are prone to make sweeping statements regarding the superiority of honey as a food, as a sweet, and as a source of energy, but recognized factual information supporting such statements are not generally available.

If reliable study can determine that honey has superior nutritional qualities and in what manner, such information would be widely accepted by the consumer and by the food processing field, and would give great impetus to a sales promotional program.

The Board of Trustees will welcome suggestions that will assist them in properly executing their duties. In due time, they expect to amplify their efforts and request the cooperation of fellow beekeepers in carrying out this program.

A historical and congenial joint meeting of the Board of the American Honey Institute and the Executive Committee and staff of the American Beekeeping Federation at Dallas, Texas. Seated left to right are Roy A. Grout, Edw. A. Wolfe, H. C. Jensen, R. F. Bremer, Glenn Gibson, Chas. Hansen, and Glenn O. Jones. Standing left to right are Roland Hone, R. B. Wilson, Steven C. Parks, E. H. Ades, T. E. Hurlison, John W. Kolsberlein, R. H. Dadant, and Alan Root.

The 1952 Executive Committee of the American Beekeeping Federation takes time out from an executive session at Dallas, Texas, to smile for the camera. Left to right are H. C. Jensen, immediate past-president, Howard Graff, Howard Foster, E. H. Ades, Henry Scheeler, Charles Hansen, and C. G. Langley, vice-president. President Glenn Gibson was too busy to get in the picture.



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50 & up	1.00	3.00	4.00

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Lots of 300 - \$3.75 each
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Extra Queen	\$1.00 each		

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and you will learn how easily you
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American Bee Journal



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Bees and Queens
 Starline Queens—
 \$1.45 each ppd.
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 A few Italian queens each
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Pure leather colored acclimated Italian stock; shipping in May.

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Select tested 2.00

Clipped, Air Mailed, Painted

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1-24	\$1.20	\$3.75	\$4.75
25-99	1.10	3.50	4.50
100-999	1.00	3.25	4.25
1,000-up95	3.00	4.00

For Queens of Dadant's Improved Stock of "Starline" D.R. Hybrids, add 25c per queen or package. Queens clipped and marked free. Prepaid via Air Mail when expedient.

Package bees by Express Collect. Live Delivery Guaranteed. By Parcel Post allow 6 Lbs. and 8 Lbs. on 2-lb. and 3-lb. Pkgs. respectively and apply your postal zone, and include postage. Trucks loaded by prearrangement.

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ITALIAN QUEENS and BEES

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Queens	1.00

No discount from these prices.

Safe arrival guaranteed by express.

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Petal, Miss.



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25-99	1.00 air mail	3.25	4.25
100 & up ..	.95 air mail	3.00	4.00

WALTER T. KELLEY CO., Paducah, Kentucky

All Around The Bee Yard

by G. H. Cale

I'm receiving considerable fan mail lately. Of course, my vanity is stirred up no end. One letter from Frank Lucore of South Sioux City, Iowa, says: "Regarding the new form of the American Bee Journal, I feel that you folks have made a great step forward. The continuity throughout each issue is so forceful, carrying on the trend of thought for the reader, I feel we all profit greatly. The use of articles by beekeepers in the varying degrees of their work, the scientific and the practical operations from a commercial angle, give great strength to your Round-ups. I am enthused."

(Now here's where I hold my hat). "I start from the front, thumb through to get the general idea, and then read 'All Around the Bee Yard' first. Somehow it brings to me the feeling that beekeeping is more than a means of livelihood; it is a finer way of life."

Thank you, Mr. Lucore! It is that spirit I would like to underlie this department of mine. Beekeeping is a way of life. When it is possible to live through your work, you are fortunate indeed.

I have always been a commercial beekeeper, from the beginning. On that far away date our need for bees was strictly for pollination; for cucumbers under glass just outside of New York City. The bees helped us produce those long, smooth, almost seedless cucumbers for which the particular New Yorker even then was willing to pay a good price.

Later my step-father, Fred Dewey, in Massachusetts, had bees in his home orchard and fruit plot. He was the first man to show me how to produce comb honey; and how to "water down" a swarm with the garden hose. It works too.

Fred's brother, Elbert, was an itinerant beekeeper in the Berkshires. Apiaries were numerous there, often on wealthy estates. Our job was to take full charge of these yards which often ran as high as fifty colonies. Altogether we "road herd" on two or three hundred colonies. Elbert was father of the Dewey foundation fastener that many of you older beekeepers may remember. It was the first of the present line of fasteners for putting foundation in comb honey sections.

Then came the university and assistance in the bee yard, and wax rendering, beekeeping classes, and state inspection under Dr. Burton N. Gates. J. B. Mervin, of Prattsville, New York, sent for me one summer and the bug bit deep. Mervin is still there with son, Charles, in with him. Then came the teach-

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1 - 24	\$1.15	\$3.50	\$4.40	\$5.30	\$6.20
25 - 99	1.05	3.25	4.10	4.95	5.80
100-499	.95	2.95	3.80	4.60	5.40

Tested Queens, \$2.50 Each

Queens Postpaid—Airmailed—Clipped—

No Extra Cost

Queenless Package—Deduct Price of Queen

Packages F.O.B. Shipping Point

THE STOVER APIARIES

Mayhew, Miss.

ing of beekeeping, government work with Dr. Phillips and Geo. Demuth.

When I cut all these bridges behind me in 1921 to be with the Dadants I did not know how great a tie would develop between myself and C. P. Dadant. For him too beekeeping was a way of life, almost exclusively so. One could not work with him twenty-five years and not come to the same conclusion.

The only great disappointment in beekeeping in my experience was my attempt to develop beekeeping for myself on too large a scale, so that it became a burdensome necessity. I now do not envy those who say, apparently with pride: "Oh, I have (1000-2000-3000—) colonies." I respect you for your valor, my friends, but I don't envy you. I have 450 and would only have more if my entire living had to come from the bees. I doubt if then I would much more than double. I would so much prefer to keep a "way of life" than a "way of fortune."

The way the writing for this department shapes itself as I go along

often causes me to wonder what guides the hand. I did not intend, when Lucore started me off, to become so personal. Well, it's done and I declare I won't do it over. Let it stand.

A couple of notes along the usual vein; if it would quit raining I would be itching to see if my bees are short of stores. Most of those who visit here say wintering has been excellent with considerable late winter brood. The time will come when even above average reserves will run out and we may have to feed more than we usually do this year.

Some of the weather prophets among my friends also tell me that they look for an early flow. Here that might mean late May. Last year the flow began nearer to June 10th, which is an average date. That may bring problems too. The shorter the time to the flow the harder we must work to bring colonies to strength. If the winter colony keeps up its growth as it has started, however, the problem will not be too difficult.

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Answers . . .

conducted by

Frank E. McLaughlin



How can bees be kept from swarming without cutting queen cells?

Earl M. Long, Ohio

This question is a big one. When the bees get the swarming fever, they are almost bound to swarm. When a double hive body is used, there is more room available for the queen to lay, and the hive body does not become crowded as quickly as when a single hive body is used.

Requeening with young queens in the spring keeps down swarming to some extent for that season. Other factors which help prevent swarming are good ventilation, some shade, and plenty of room in the hive.

The Demaree plan of swarm control is used by many beekeepers in different ways. The basic idea is to move the sealed brood into the upper chamber above a queen excluder, leaving the unsealed larvae and eggs below with the queen. Sometimes this works, and sometimes they will swarm anyway. Breaking up the brood nest helps without doubt, but if there are some eggs in the brood frames raised above the excluder, the bees will draw queen cells.

Do you have any information on how to stop bees from interfering with the feeding of cattle or other livestock?

Texas Farmer

Bees can be quite a problem when they get started working cattle feed and keep the cattle from it. Sometimes the bees won't quit the feed until natural pollen is coming in. However, if the bees have plenty of pollen substitute in shelter boxes in the bee yard they will soon leave the cattle feed alone. For this substitute use a mixture of brewer's yeast and soybean flour with some

sugar in it. Without the sugar the bees will not work it very well. The substitute must be kept dry. Make a box with a Celloglass sloping or roof cover over it and set it up on legs off the ground. About 25 or 30 pounds of substitute should be used. The bees won't visit it in inclement weather, but neither will they visit the cattle feed. A little salt placed around the edges of the substitute will help.

Can I feed my bees dry granulated sugar by placing it above the combs? I have trouble with my bees robbing when I feed sugar sirup.

J. G. Hackley, New Mexico

Many beekeepers feed dry sugar to bees. It is poured on top of an inner cover with an empty super set on top and then the hive cover. The bees carry the sugar down through the hole in the inner cover.

I feed my bees sugar sirup early enough in the fall so that they will have time to cure it. I use Boardman feeders and partly close the entrance. This reduces or prevents robbing.

Some beekeepers make a candy to feed bees for winter. Here is the recipe: Pour granulated sugar into a pan of hot water on the stove, stirring constantly. Dissolve all the sugar before boiling starts. The sirup should be very thick. To avoid scorching reduce the heat, as scorched candy is not fit for the bees. When a small amount of the sirup dropped in a cup of cold water becomes hard and brittle, the candy is done. Pour out on waxed paper on a table. The candy will be the color of light amber honey. After it stands awhile, it becomes sticky. These cakes of candy may be placed on a sheet of waxed paper on top of the frames under the hive cover.



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2-lbs. with Queen \$2.50 Discounts
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This light modern tool is for easy handling and removal of frames from the bee hive. Orders promptly filled—Satisfaction guaranteed. \$3.00 plus 30c postage fee.

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Good queens, good quality, good service
Queens Packages with queen
1 to 50 ... \$1.00 2-lb. 3-lb.
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American Rabbit Journal

DEPT. 2. WARRENTON, MISSOURI

April, 1952



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BRED IN ISOLATED YARDS



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Starline Queens	1-94	25-99	100 up
Italian	\$1.45	\$1.25	\$1.25
	1.50	1.10	1.00

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3-lb. packages with select untested queen	\$2.75 each	\$2.65 each	\$2.50
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Select untested queens after June first \$1.10 each, any number. Circular on request.

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HUTCHISON MFG. CO., Licensed Mfr.

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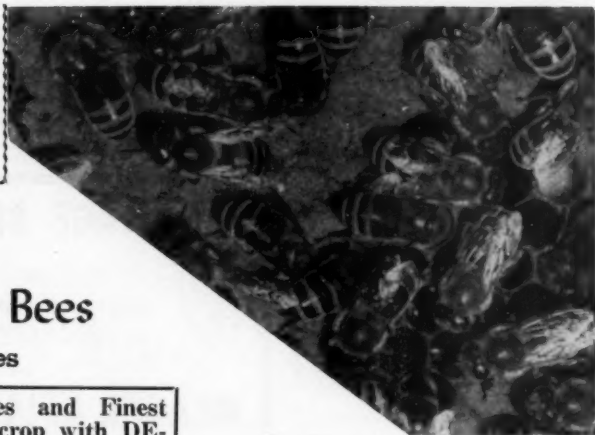
LOS ANGELES 25, CALIFORNIA

BRIGHT ITALIAN QUEENS

That will give you beautiful, gentle bees, unequalled as honey gatherers. Many years experience in rearing them. Supreme quality is what we try to give you. They will and must please you. Try them. 1 or 100, \$1.00 each. Clipped if desired.

COTTON BELT APIARIES

Klondike, Texas



BERRY'S Old Reliable Italian Bees

57 Years With the Bees

America's Best Package Bees and Finest Queens INSURE your honey crop with **DEPENDABLE BERRY Bees** (90% of our package bees are under 10 days old).

Fill those vacant and weak hives with Berry's producing swarms. We ship annually thousands of packages and queens. We have virtually no complaints as to supercedure, and **ABSOLUTELY NONE** relative to **NOSEMA**. Having a large number of branch apiaries located in the North Central Western States gives us an excellent opportunity to test our unsurpassed strain for not only honey production, but also for diseases and climatic working ability. In our **CUSTOMERS'** opinions as well as our own, our strain of Italian bees are unsurpassed by any type or kind of bee known, whether hybrid or otherwise. Fifty-seven years of **SELECTIVE BREEDING COUNTS**.

Package Bees With Queens and Individual Queens

	Queens	2-lb Pkg.	3-lb. Pkg.	4-lb. Pkg.	5-lb. Pkg.
1-24 -----	\$1.15	\$3.50	\$4.50	\$5.50	\$6.50
25-99 -----	1.10	3.40	4.40	5.40	6.40
100-499 -----	1.05	3.30	4.30	5.30	6.30
500-Up -----	1.00	3.25	4.25	5.25	6.25

(For Queenless packages deduct price of queens)

All of our queens in our packages, or individual queen orders, are **SELECT QUALITY**. The culls we **DESTROY**. Only queens we would use in our own apiaries do we cage for shipment. Queens' wings clipped **FREE OF CHARGE** on request.

Safe arrival and satisfaction we guarantee on everything we ship, whether packages or queens. All orders filled **PROMPTLY**. We have **NO DISEASE**. A **HEALTH CERTIFICATE** and directions telling how to handle accompany all shipments.

References: The Union Bank & Trust Co., or First National Bank, Montgomery, Alabama. Any bee journal in the U. S. or Canada.

Remember: Thousands of strong colonies and thousands of queen yard nuclei enable us to give you **PROMPT** and **DEPENDABLE SERVICE**.

CAUTION: We ARE NOT TO BE CONFUSED OR COMPARED IN ANY WAY WITH THE MANY PART-TIME, UNRELIABLE, SMALL BEEKEEPERS WHO ARE CLASSING THEMSELVES AS **DEPENDABLE SHIPPERS**.

M. C. BERRY & SON

P. O. Box 684

Montgomery, Alabama

Oldest Active Package Shippers in the South

Southern California's
Highest Production
ITALIAN QUEENS
1952 Prices

1 - 24	\$1.20
25 - 99	1.10
100 - over	1.00

Available about April 10
Order Early

YATES APIARIES
P. O. Box 227
San Bernardino, Calif.

A Good Rule to Go By
Buy your Bees and Queens from—

ALABAMA APIARIES
Urich Ala.

Italian Queens	\$1.00
2 lbs. — \$3.00; 3 lbs. — \$4.00	

1952
CAUCASIAN
Package Bees

LOHMAN BEE CO.
R. No. 2, Box 644, Loomis, Cal.

3-Banded

ITALIAN BEES & QUEENS	
2-lb. pkg. with queen	\$3.00
3-lb. pkg. with queen	4.00
Extra queens	1.00

J. P. CORONA
Box 194 Zenner, La.

G. B. Lewis Wooden Goods!

**DADANT'S WORLD FAMOUS CRIMP-
WIRED FOUNDATION**—Their 55 years'
experience is your safeguard.
Catalogue on request.

DOTSON'S APIARIES
3059 W. Roxboro Rd. N. E., Atlanta, Ga.

NORTHERN CALIFORNIA
ITALIAN QUEENS
PACKAGE BEES
Nuclei and full colonies.

WINFIELD GEAR APIARIES
Tehama, California

BEE SUPPLIES

A. H. Rusch & Son Co.
MANUFACTURERS—JOHNSON
REEDSVILLE, WISCONSIN

BEES and QUEENS
Send for **FREE** Circulars
Booking orders now.
Over 30 years a shipper.
Blue Bonnet Apiaries
Wealaco, Texas

THE RICH HONEY FARMS

Jeanerette, La.

ITALIAN PACKAGE BEES

Heavy with bees, no drones. Shipped
by parcel post or express. For parcel
post shipment add 75c per package for
postage.

QUEENS

The finest money can buy. Your choice
of two outstanding breeds. Painted,
clipped or airmail at no extra cost.



Dadant's
Starline Hybrids

Reg. U.S.
Pat. Off.
Worth much more than the
price we are asking. You
have years of selective
breeding and testing in the
ancestry of this strain. Queens pro-
duced by Rich's efficient methods from
Dadant's special hybrid stock. Gentle,
prolific, and resistant to AFB.

Rich's
Leather Italian Stock

Gentle, uniform and good producers—
will do their part in getting for you
many supers of honey. Breeding stock
selected for high production, non-
swarming and gentleness. These bees
are not resistant to AFB as are the
Starline Hybrids. You will, however,
find them very profitable.

PRICES

Queens		Starline Queens		Regular Italian		2-lb.		3-lb.		4-lb.	
1-24	\$1.45	1-24	\$1.20	25-99	1.35	25-99	1.35	25-99	1.35	25-99	1.35
25-99	1.35	100 up	1.25	100 up	1.25	100 up	1.25	100 up	1.25	100 up	1.25
100 up	1.25										

When ordering packages with Starline queens add 25c per package.

PLANT'S THREE-BANDED ITALIANS

Productive, Gentle, Easy to Handle

Our package colonies are shaken every ten days to two weeks and all bees enter-
ing the packages are strained through an excluder. 90% or more are less than
two weeks old. No drones. No stray queens.

We have never received a report of any Nosemia in our bees.
Prompt shipment in light weight cages with health certificate attached.
All queens are young, laying properly, and first quality.
Safe arrival guaranteed by express, however we will ship by mail at buyer's risk.

Quantity	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1 to 24	\$1.25	\$3.50	\$4.50	\$5.50	\$6.50
25 to 99	1.15	3.25	4.25	5.25	6.25
100 up	1.10	3.00	4.00	5.00	6.00

Each package has a young, laying queen.

W. E. PLANT

Hattiesburg

Route 2

Mississippi

FLOWERS QUALITY ITALIANS:

THAT WILL STAND THE TEST FOR HONEY GATHERERS GENTLE, PROLIFIC
We wish to thank each and every one for the business you gave us last year.
We are better prepared to serve you this year. Our motto is to serve you with
the best young bees and queens money can buy. Ask our customers. State
health certificate with each shipment, prompt live delivery guaranteed. We don't
guarantee parcel post shipments. Shipped when wanted, but place your orders
early, no orders too large or too small.

Package with young laying queens **F.O.B.**
2-lb. package \$2.75 4-lb. package \$4.25
3-lb. package 3.50 5-lb. package 5.00
Extra queens mated (untested) \$1.00

FLOWERS BEE COMPANY

Jesup, Georgia, U.S.A.

THREE-BANDED ITALIAN PACKAGE BEES AND QUEENS

Italian stock that is carefully selected primarily for what they produce and
their gentleness. Place your 1952 requirements with me now. Have Cau-
casian queens also. Prices are:

Lots of—	Queens	2-lb. w/q	3-lb. w/q	4-lb. w/q
1-25	\$1.15	\$3.00	\$3.90	\$4.85
25-50	1.05	2.90	3.80	4.75
50-100	1.00	2.85	3.75	4.65

FARRIS HOMAN

Shannon, Mississippi

ITALIAN BEES AND QUEENS

	1-9	10-99	100 up
2 lb. pkg. with queen	\$2.75	\$2.65	\$2.50
3 lb. pkg. with queen	3.70	3.60	3.45
4 lb. pkg. with queen	4.50	4.40	4.25
Nice large queens	.85	.75	.70

We guarantee you nice large 1952 queens, and full weight packages. Order
early for your preferred date.

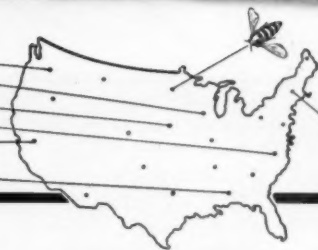
MITCHELL'S APIARIES

Box 391, Bunkie, La.

Use ABJ Labels — They Get Results



MEETINGS



St. Clair Beekeepers Assoc. Belleville, Ill., April 2

The following officers for the coming year were elected at the meeting March 5: President, Geo. L. Hankammer; Vice-Pres., Henry L. Kaiser; Secretary-Treasurer, L. M. Leiper. The new president announced that the next meeting, April 2 at 8 P. M. will be held in the basement of the Illinois Power Co. in Belleville. The company's home economist will give demonstrations in the test kitchen of the use of honey in cooking and deep freezing. The wives of members and their friends are invited to be there. Moving pictures will be shown and refreshments served.

L. M. Leiper, Sec'y

Westchester County Beekeepers New Rochelle, N. Y., April 20

The regular monthly meeting of the association will be held at 2:30

P. M. on Sunday, April 20 at the Odd Fellows Hall, 20 Lockwood Ave., New Rochelle. The best way to feed sugar and supply pollen substitutes will be discussed and bee movies will be shown. Refreshments will be served and anyone interested in bees is invited to attend.

New officers for the ensuing year are: President, John Keller; Vice-Pres., Harold McConaghy; Secretary, Bernadette Miller; Treasurer, J. A. Bailey.

Carlton E. Salter, Publicity

Middlesex County Beekeepers Assoc. Waltham, Mass., April 26

The last indoor meeting this season will be held April 26 at the Waltham Experimental Field Station. The biannual election will be held and plans will be formulated for visits to apiaries of various members during the spring and summer.

Plants of button bush and sweet pepper taken from the North Andover section of Massachusetts are being sent as a gift of the association, in honor of Langstroth's discovery of the bee space, to the Morris Arboretum at Philadelphia.

John H. Furber, Sec'y

Short Course for Beekeepers Ames, Iowa, May 13-14, 1952 Memorial Union, Room 206 Tuesday, May 13

- 9:30—Registration
Bee Activity, F. B. Paddock,
Moderator
10:00—Inside the Hive—Dr. O. W.
Park, Ames
10:30—Outside the Hive—G. H. Cale,
American Bee Journal, Ham-
ilton, Illinois
11:00—Pollination—R. J. Walstrom,
Ames
11:30—Discussion by the Audience

Will you buy bees this Spring?

If so and especially if you intend to get Kelleys Island Hybrids place your order at once. The demand is great and we cannot guarantee to deliver Hybrids on short notice. However, we will do our best.

Buy your bees as you would seed for your farm or garden. The best is cheapest regardless of price. The queen is your bee seed.

PACKAGE BEES

Headed either by our regular strain queens or Kelleys Island Hybrids at the following prices:

	2-lb. with queen	3-lb. with queen
1 to 25	\$3.25	\$4.25
26 or more	3.00	4.00

"They Produce"

Club your orders and pick up by truck for substantial savings.

Satisfaction Guaranteed

ROSSMAN & LONG

P. O. Box 133

Moultrie, Ga.

HONEY BEESWAX SUPPLIES

SUPERIOR HONEY COMPANY

FOUNDED FOR THE BEEKEEP-
ING INDUSTRY OF THE WESTERN
UNITED STATES.

A MARKETING OUTLET FOR ALL
TYPES OF YOUR HONEY.

A MARKETING OUTLET FOR YOUR
BEESWAX.

A SOURCE FOR YOUR SUPPLIES AND
EQUIPMENT.

We are in business to serve you.

Visit our plants.

Ogden, Utah; Idaho Falls, Idaho; Denver, Colo-
rado; Los Angeles, California; Phoenix, Arizona;
and our Wood Goods Mill in Madera, California.

Spring Management, G. H. Cale,
Moderator

1:30—Wintered Colonies—Henry A.

Schaefer, Osseo, Wisconsin

2:15—Package Colonies—Henry W.

Hansen, Dakota City, Iowa

2:30—Wintered Colonies—John G.

Jessup, Perry

2:45—Discussion—Everybody

4:00—Demonstration—College

Aplary

7:30—Science Building, Room 308

Frank L. Swanson, Council

Bluffs, Presiding

Movies—Canadian Hunting

Trip—Henry A. Schaefer

Wednesday, May 14

9:30—Registration

Summer Management—John Jessup,

Moderator

10:00—Extracted Honey—Henry A.

Schaefer

10:45—Bulk Comb Honey—Newman

I. Lyle, Sheldon

11:00—Extracted Honey—L. D. Tay-

lor, Harlan

11:15—Discussion—Everybody

Noon

Fall Management—R. J. Walstrom,

Moderator

1:30—Colony Adjustment—Henry

A. Schaefer

2:15—Late Summer Adjustment—

Lloyd Stanley, Gilbert

2:30—Putting into Winter—G. H.

Cale, Hamilton, Illinois

2:45—Discussion

4:00—Demonstration—College

Aplary

4-State Meeting

A four-state summer meeting has been scheduled for July 12, at Sioux City, Iowa. This site was chosen primarily because it is centrally located for beekeepers from Iowa, Minnesota, South Dakota, and Nebraska, although all those interested in the beekeeping industry are welcome to attend. Details of the day's program will be made available at a later date.

The Sioux Honey Association will act as host for the day, with Walter Johnson of that firm in charge of arrangements. Henry Hansen of Dakota City, Iowa, and Ed Wolfe representing Nebraska, are the other two members of the general committee. Edw. W. Wolfe

New Officers

Knox County Beekeepers Assoc. Elected at the January meeting of the Knox County (Tenn.) group were: President, John W. Snyder, Fountain City; Vice-Pres., Paul M.

Sumers, Corryton; and Secretary-Treasurer, Mrs. E. T. Henson, Knoxville.

The next meeting will be held on April 26, 1952 at the home of Mrs. E. T. Henson, 5105 Central Ave., Knoxville, Tenn.

John W. Snyder, Pres.

New Officers

At an annual meeting held at the home of Ralph Spring, Meadville, Pa., on February 17, the Crawford County Beekeepers' Association elected the following officers: President, Ralph Spring, Meadville; Vice-Pres., Raymond Bentley, Guys Mills; Secretary - Treasurer, Mrs. Eva Moore, Jamestown.

Children's Candy . . .

½ pkg. Post Toasties, ½ pkg. Rice Krispies, ½ lb. coconut, ½ lb. peanuts or other nut mixture. Mix well and then add sirup.

Sirup—1 cup cream, 1 cup honey, 1 cup sugar. Cook until soft-ball stage. Pour on above and mix well. Pour in pans and when cool cut in squares. Makes two large pans.

Mrs. Leonard Thrall
Minnesota

1952 CAROLINA'S

Three-Banded Italian

BEES and QUEENS

Same High-Quality Merchandise and Service

1. PREPAID to your door
2. Shipped by any means of your choice
3. Queens clipped and painted for easy identification
4. Guaranteed safe arrival
5. Health Certificate with each shipment.

In spite of increased labor and material costs, our 1952 prices have NOT BEEN INCREASED.

1952 PRICES DELIVERED, PREPAID

	Queens	2-lb. & each queen	3-lb. & queen	4-lb. & queen	5-lb. & queen
1-24	\$1.10	\$4.00	\$5.00	\$6.00	\$7.00
25-99	1.00	3.75	4.70	5.65	6.60
100-499	.95	3.50	4.40	5.30	6.20

(for queenless packages deduct price of queen)

SHIPPED ANYWHERE IN UNITED STATES AND CANADA

Terms: One-third upon receipt of order, balance ten days before shipment.

H. C. Brunson, Lessee

CAROLINA HONEY COMPANY

P. O. Box 188

Phone 4282

HAMPTON, SOUTH CAROLINA

(formerly Varnville)

Dependable TANQUARY Service

BEES 1952 QUEENS

WE OFFER YOU PROVEN PRODUCERS

Satisfied customers through the years give you our best testimonial and assure you the greatest value here.

PRICES:

Quantity	2-lb.	3-lb.	4-lb.	5-lb.
1 to 24	\$3.25	\$4.00	\$4.75	\$5.50
25 to 99	3.00	3.75	4.50	5.25
100 to 199	2.75	3.50	4.25	5.00

Untested Queens	1 to 24	\$1.15 ea.
	25 to 99	1.10 ea.
	100 to 199	1.00 ea.

Tested Queens—\$2.00 each.

Price of Queenless packages—deduct price of Queen.

Queens Postpaid
Package Bees F.O.B.

TANQUARY HONEY FARMS, INC.

SPRINGFIELD, GA.

Western Union
Springfield, Ga.

Telephone
Springfield 139



"Wise-Woodmanize with Your Bee Supplies"

A. G. Woodman Co. (Send for Catalog—350 Listings) **Grand Rapids 4, Mich.**

Starline
SUNKIST
Italian

Your choice of two fine lines. The Starline hybrid artificially bred for top performance plus resistance to AFB. Our regular Italians a favorite for years. Parcel post or Express.

Reg. U.S. Pat. Off. Early orders solicited.

	Starline Queens	Italian Queens	2-lb. w/q	3-lb. w/q	Pkgs. with Starline Queens
1-24	\$1.45	\$1.10	\$3.50	\$4.50	Add 35c
25-50	1.35	1.00	3.25	4.25	Add 35c
50-up	1.25	0.95	3.00	3.90	Add 35c
100-999	1.25				

SUNKIST BEE COMPANY **Convent, La.**

ITALIAN QUEENS
\$1.10 up to \$1.15
Larger lots write for prices. Queens from stock of 250 to 500 productions mated to drones of similar stock.

BEES—2-lb.—\$3.50
3-lb.—4.50
Will take white and water white honey as down payment or in full.

HOMER W. RICHARD
1411 Champagnolle St., El Dorado, Ark.

ROOT BEE SUPPLIES
HONEY PRODUCER AND PACKER'S SUPPLIES
Michigan Bee & Farm Supply
Box 7, 510 N. Cedar, Lansing, Michigan

We Have Nothing to Sell
But a Good Bee Journal

BEEKEEPERS MAGAZINE
LANSING 17, MICH.

Fourteenth Year of Publication
One Year \$2.00 — 3 Years \$5.00
Sample copy mailed upon request

GOOD ITALIAN QUEENS
IN SEASON
WHITE PINE BEE FARMS
Rockton, Penna.

FREE...
A Sample Copy
"Gleanings in Bee Culture"
LOOK IT OVER
YOU WILL LIKE IT
A. I. ROOT CO., Medina, Ohio

AN ADEQUATE SUPPLY OF

Dadant's Crimp-Wired Foundation

will assure you fine combs. You are protected too when you know it is made of pure beeswax.

DADANT & SONS, Inc., Hamilton, Illinois

Brazos Valley Apiaries
Cameron, Texas
Bees and Queens
Brazos Valley Apiaries
Cameron, Texas

ITALIAN OR CAUCASIANS

	1 pkg.	2 or more
2-lb. bees with young queen	\$3.00 each	\$2.75 each
3-lb. bees with young queen	4.00 each	3.65 each

Over a quarter century in the same place, same business, under the same name, is my record. My motto: I expect to do business with you again.

H. E. GRAHAM **Cameron, Texas**

A Famous Strain of Yellow Italians

— Produced by —

THE WORLD'S MOST MODERN BEE BREEDING ESTABLISHMENT.

In the production of perishables, such as package bees and queens, volume sales cut down the cost of production per unit. With this in mind we have decided to make an unprecedented offer. We are enabled to do this because of our modern equipment which makes for the greatest of efficiency in all operations, resulting in greater value per dollar invested for you, and greater pleasure.

EFFECTIVE NOW UNTIL MAY 20TH—DEDUCT TEN PER CENT OFF ALL PRICES BELOW

Our Famous Strain of Light Colored Italians

NEW 1952 PRICES

Lot	Queens	2 Lbs.	3 Lbs.	4 Lbs.	5 Lbs.
1-5	\$1.35	\$3.55	\$4.50	\$5.45	\$6.40
5-15	1.30	3.50	4.45	5.40	6.30
15-25	1.20	3.40	4.35	5.25	6.20
25-100	1.15	3.30	4.25	5.20	6.10
100 up	1.05	3.20	4.15	5.05	6.00

Small orders, cash in full. Large orders, 20% deposit, balance before shipping date.

THE DANIELS APIARIES, Picayune, Miss.

1952 **Sam E. Moore** 1952

NO PACKAGES—JUST QUEENS

Do You Want Some Personally Raised

TOP QUALITY ITALIAN QUEENS?

1-10	\$1.25
11-20	1.15
21-30	1.10
31-40	1.05
41-50	1.00
50 or more	1.00

Prices postpaid by Air Mail.

All Queens raised in large 4 frame nuclei.

SAM E. MOORE

2436 North St. Redding, Calif.
Phone 293 E

NEISES

HONEY EXTRACTING
and
BOTTLING EQUIPMENT

Mfd. and For Sale by

THE NEISES CO.

Box 249, Marshfield, Wis.

PACKAGE BEES FOR 1952

Truck loads a specialty.
Nuclei made to order. Italian queens, any number at any time.

EUGENE WALKER

Route No. 2 — Box 207
Live Oak, Calif. — Phone 5594

BRITISH BEE JOURNAL

THE ONLY WEEKLY BEE JOURNAL IN THE WORLD

Subscription \$4.00 per annum payable in advance

Keep up to Date in Beekeeping by taking out a subscription now through our agents:

AMERICAN BEE JOURNAL

High Quality Italian
Package Bees and Queens
Prolific and Productive

Queens	2-lb.	3-lb.	4-lb.	5-lb.
1-34	\$1.00	3.25	4.00	4.75
25 up	.90	2.90	3.65	4.40

Write for prices on larger orders.

Bees are shipped in new, neat, lightweight shipping cages by express collect or parcel post when prepaid by customer.

10% books your order, balance due 10 days before shipping date. State Health Certificate and Live Arrival Guaranteed. Please send your requirements in as soon as possible. Thank You.

CARLUS T. HARPER

NEW BROCKTON, ALABAMA

Dadant's Starline Hybrids



Queens

1-34 \$1.45
25-99 1.35
100 up 1.25

Reg. U.S. Pat. Off.

Produced in Little's Apiaries

Queens Packages Queens Packages

2-lb.	3-lb.	4-lb.	Queens with Davis
\$2.75	\$4.50	\$5.45	queens deduct
3.50	4.40	5.25	25c from
3.25	4.25	5.15	Starline prices

Extra pounds—\$1.00 per pound, shipping starts about April 10

Packages will be shipped from our Alabama Apiaries

Address all correspondence to:

P.O. Box 122

LITTLE APIARIES

Shelbyville, Tenn.



GULF BREEZE PACKAGES AND QUEENS

RUSH your order for prompt service and satisfaction. We can still accept TRUCK LOAD and small orders. Our light shipping cages will save you on express charges.



Quantity
1-34
25 Up

Queens
\$1.10
1.00

PRICES:

2-lb. Pkg.
W.Q.
\$3.25
2.00

3-lb. Pkg.
W.Q.
\$4.15
2.90

4-lb. Pkg.
W.Q.
\$5.15
4.90

BESSONET BEE COMPANY

Donaldsonville, La.

PACKAGE BEES—ITALIAN BEES and QUEENS

On the same old basis—QUALITY, SERVICE, SATISFACTION

Live delivery guaranteed on all shipments. 10% deposit books any order.

2-lb. pkg. with queen	\$2.00
3-lb. pkg. with queen	4.00
4-lb. pkg. with queen	5.00
Queens	.90

Write for discount on orders over 25 packages
Special prices to those who truck.

E. J. BORDELON APIARIES

Phone 5415 Moreauville

Box 33, Moreauville, Louisiana

QUEENS—PACKAGE BEES FOR 1952

ESTABLISHED 1883

Maximum production is most easily assured with superior bees and queens. That's one way we try to help you make money. Superior bees and queens is our motto at all times. We like to have 50 per cent deposit and balance before shipping date. We believe this is fair to all—as we like to plan and ship the day you want shipment. Price scale:

Queens, any number	\$1.00—Tested Queens \$2.00
2-lb. package and queen	\$3.00 any number
3-lb. package and queen	4.00 any number

THE VICTOR APIARIES

Uvalde, Texas

KNIGHT'S Three-Banded Leather Colored ITALIAN BEES and QUEENS

Change in prices for April and May Delivery:

2 lb. pkg. with Queen, any number	\$3.00
3 lb. pkg. with Queen, any number	4.00
Queens via Air Mail, any number	1.00

I guarantee a good full weight package with a Good Young Laying Queen, Safe Arrival and Your Satisfaction.

I WILL APPRECIATE AN ORDER FROM YOU

JOHN T. KNIGHT

Hayneville, Ala.

THREE-BANDED ITALIAN BEES and QUEENS

May we have the pleasure of serving you with the very best in Three Banded ITALIAN BEES and QUEENS?

Guaranteed full weight packages—young baby bees—young laying queens. Live delivery guaranteed. Prompt service.

2-lb. pkg. with queen—\$2.75 3-lb. pkg. with queen—\$2.75
For queenless package deduct price of queen. Extra pound of bees add one dollar.

LUCEDALE APIARIES

Lucedale, Mississippi



STARLINE QUEENS AND PACKAGE BEES

Packages headed by Dadant's Starline Queens will produce more honey easier with less stinging and are resistant to American foulbrood. These are facts reported to us by users of this stock.

Quantity	Queens	2 lbs. w/q	3 lbs. w/q	extra bees \$1.00 per lb.
1-34	\$1.45	\$3.75	\$4.75	
35-99	1.35	3.50	4.50	
100-up	1.25	3.35	4.35	

Reg. U.S.
Pat. Off.

For our standard 3-banded Italian stock deduct 25 cents per item.

WICHT APIARIES

406 Miller St., Hattiesburg, Miss.



DADANT'S STARLINE HYBRIDS Package Bees and Queens

Reg. U.S.
Pat. Off.

C. G. WENNER
Glenn, California

CAUCASIANS UNLIMITED

Unlimited in Quality Unlimited in Quantity

In 1952, more than ever before, the largest shipper of quality Caucasian queens exclusively. Improved breeding stock and improved methods of queen rearing will help to insure more profit and pleasure in beekeeping when you buy Caucasians Unlimited. Quality and quantity with the kind of service you have a right to expect.

Prices postpaid by Air Mail

Less than 12	\$1.25 ea.
12 to 49	1.15 ea.
50 to 99	1.10 ea.
100 to 499	1.05 ea.
500 or more	1.00 ea.

Package bees available in limited quantity at nominal prices.

THOS. S. DAVIS

Route 7, Box 3914

Sacramento, Calif.

BETTER BRED QUEENS THREE BANDED ITALIANS

Shipments are now rolling, we have plenty of Bees for early shipments. Our Better Bred Stock is as good as money can buy. Order direct from this ad at the following prices:

	Queens	2-lb. pkg. w/q	3-lb. pkg. w/q
1 to 18	\$1.15	\$3.25	\$4.15
18 to 99	1.05	3.10	4.05
99 up	1.00	3.00	4.00

Larger packages at 90c per pound more. For queenless package, deduct price of queen.

CALVERT APIARIES

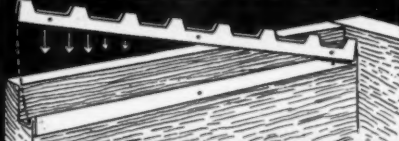
Calvert, Alabama

STOLLER *Slip-on* FRAMESPACER

LESS WORK

MORE PROFITS

Now used everywhere as essential equipment. Sixteen styles to fit any standard frame. Write for details, prices.



STOLLER *Honey Farms* LATTY, OHIO

YELLOW ITALIAN BEES AND QUEENS

2-lb. bees with queen	\$2.75
3-lb. bees with queen	3.75

Queens untested at 90c each.

We guarantee—Live delivery, health certificate, and satisfaction with each order.

OSCAR ARNOUVILLE

Hamburg, La.

Treat Your Hives With

CUPRINOL STOPS ROT

Applied by brush, spray or dip to the bare wood. Cuprinol will greatly lengthen the life of your hives by stopping rot. May be painted over. Does not offend bees. At hardware, paint and lumber dealers or direct. \$4.70 gal.; \$1.75 qt. Check or money order. No C.O.D.'s

CUPRINOL Division, Darworth Inc.
61 Maple St. Simsbury, Conn.

Northern California ITALIAN PACKAGE BEES AND QUEENS

	1-34	35 or more
2-lb. pkg. w. q.	\$3.75	\$3.50
3-lb. pkg. w. q.	4.65	4.40

Extra queens 1.20 1.10 1.00

10% books the order. Balance 10 days before shipping date.

HOMER E. PARK

FALO CEDRO, SHASTA COUNTY,
CALIFORNIA
Phone Millville 2632

CAUCASIAN

Queens and Packages

★ ★

Telegraph or
Telephone Roseville 932J

D. T. WINSLETT

7736 Auburn Road
Citrus Heights, Calif.

ITALIAN PACKAGE BEES & QUEENS for 1952

We are now booking orders for
Spring Delivery.

GIRARDEAU APIARIES
Tifton, Georgia

ITALIAN BEES & QUEENS

2-lbs. with queen	\$2.50
3-lbs. with queen	3.25
4-lbs. with queen	4.00

Queens 75c

RAYMOND MCFARLING

Shannon, Miss.

FLORIDA BEE & HONEY CO.
Route 5 Box 775
Bainbridge Road Orlando, Florida

Shipments begin March 15
**TWO HIGH PRODUC-
ING STRAINS**

Price List—March 15—
May 20, 1952



Dadant's Starline Hybrids			
Reared by our efficient methods.			
	2-lb. w/q	2-lb. w/q	Queens
1-24	\$3.45	\$4.65	\$1.45
25-99	3.50	4.50	1.35
100 up	3.30	4.30	1.30
Regular Stock			
1-24	3.40	4.40	1.30
25-99	3.25	4.25	1.10
100 up	3.00	4.00	.95

Queenless packages deduct price of queen. Guarantee live delivery.

WILLIAMS ITALIAN BEES

2-lb. package bees with queen... \$2.75
3-lb. package bees with queen... 3.75
Queens (postpaid)..... 1.00
Guaranteed full weight and prompt shipping dates. Health certificate with each shipment.

DR. WILLIAMS APIARIES

303 W. Delee St. Baytown, Texas

WESTERN

Beeswax Headquarters

Certified Beeswax Salvage Plant
Custom Rendering
Bleaching and Refining
Foundation Manufacturing
both plain and wired.

Top Cash Market for
Your Beeswax

WOODROW MILLER & COMPANY

Colton, Calif. Phone 1722

Buy Our PACKAGES and QUEENS

For Your Honey Crop.

Place orders now.

FOSTER APIARIES
Box 239
COLUSA, CALIFORNIA

ITALIANS

Let us fill your bee needs—
now is the time to order those
bees. Liberal weights, live de-
livery.

We Guarantee.

	2-lb. w/q	3-lb. w/q
1-25	\$3.40	\$4.50
25-up	3.10	4.25

Queens \$1.10

The Cherokee Bee Co.
Cordale, Georgia



START THE NEW YEAR RIGHT

Order packages and queens now and be assured of
delivery just when you want them.

Dadant's Starline Hybrids *** Our Regular Stock
No increase in prices, write for price list.

Reg. U.S.
Pat. Off.

J. M. CUTTS & SONS



Chipley, Florida

NAILLESS TOPBAR FRAMES



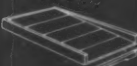
are just one of the many time and money
saving features that are found only in
Lewis Beeware.

Stop in and visit your neighborhood
Lewis-Dadant Dealer. He will be happy
to serve you.

G. B. Lewis Company

Albany 1, N. Y. - - - Chillicothe, O.
Lynchburg, Va. - - - Watertown, Wis.

NAILLESS TOPBAR
FRAME



"LEV-L DRAIN"
BOTTOM BOARD



THE
"L-V" COVER



ROT-PROOFED
HIVES



"V" SHAPED
FRAME REST



BORED
DOVETAIL

YOU WANT MERRILL'S Quality BEES

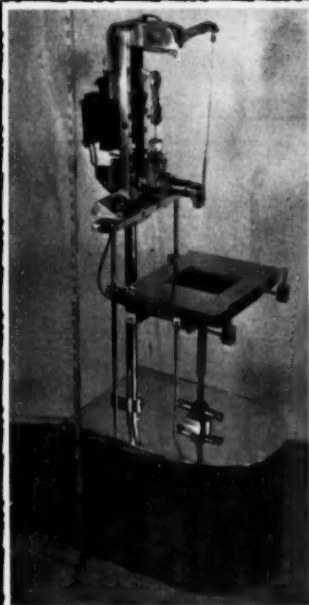
Why? Because they are as good as the best.
Now ready, no delays, D.R. Stock only.

F.O.B. Prices	1 to 50	50 to 1,000
2-lb. Packages with Queens	\$3.00	\$2.75
2-lb. Packages with Queens	4.00	3.75
Untested Queens, D.R. Stock	1.50	.80
Tested Queens, D.R. Stock	2.00	

Queens Air Mailed and clipped if wanted at above prices
Write for prices of bees delivered by mail.

MERRILL BEE COMPANY

State Line, Miss.



SIoux HONEY is the place to get
your labor-saving equipment.

National Distributor for
Electro-Flo Filling Machine

This machine features the non-drip valve with automatic shut off. It is also designed to fill any size container. The machine carries a one year guarantee.

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Midwest distributors for the Bogenschutz Uncapping machine, also.

SIoux HONEY ASSOCIATION

SUPPLY DEPT.

Box 1107

Sioux City, Iowa

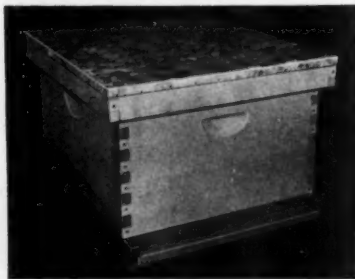
Italian Package Bees and Queens

Quality, service, satisfaction, live delivery and health certificate guaranteed.

B. J. BORDELON APIARIES

2-lb. pkg. and queen	-----	\$3.00
3-lb. pkg. and queen	-----	4.00
4-lb. pkg. and queen	-----	4.75
5-lb. pkg. and queen	-----	5.40
Queens — \$1.00		

Moreauville, La.



Five complete Hives as pictured with Kellogg's "Easy Grip" frames, \$51.75.

HIGH QUALITY LOW PRICE BEE SUPPLIES

★ ★ ★

Low prices mean nothing if shipment is not prompt and the quality is not high. We offer both and still quote very low prices because of our country location, big factory operations and personal supervision. Our 64 page catalogue is nearly twice as large as any other bee supply catalogue. Write for your free copy today.

The WALTER T. KELLEY CO.

Paducah, Ky.

THE LEAST EXPENSIVE COMBS YOU CAN GET —

Combs from Dadant's Crimp-wired Foundation have little non-profit space—no sagged areas; no distorted cells; few drones. There will be very few combs to discard. Each comb, with reasonable care, will last almost as long as your beehive. So every comb you have becomes a long-term investment. They start to save you money the moment the bees have built them. In the end they are the least expensive combs you can possibly get.

**DADANT and SONS,
Inc.**

Hamilton, Illinois

Crop and Market

by M. G. Dadant

It is easy to forget the past, but to the writer it is apparent that conditions in the honey producing field are about as rosy on April 1 as they have been in many years.

Losses

Losses have been anything but heavy this year. One or two cases in Illinois and Oklahoma report 10 to 15 per cent loss, but throughout the rest of the country, the loss has run to a negligible quantity from 1 to 5 per cent with Oregon apparently being the only exception, some losses running there from 15 to 30 per cent. On the whole, the losses have been quite ordinary, largely due to the fact that colonies went into winter with plenty of young bees and fairly ample stores. Furthermore, the winter while heavy in spots allowed occasional flights for out-of-door wintered bees, and a lack of heavy strong winds did not interfere with movement of the cluster within the hive.

Condition of Colonies

All in all, the condition of colonies is reported as excellent in practically all instances and this applies particularly in the eastern sections of the country. Only Utah reports bees in weakened condition, apparently due to long confinement and heavy snows. In most cases, the condition of colonies is above average and should progress satisfactorily unless weather conditions are adverse from now on. California reports cool, damp conditions which may reflect upon the condition of the colonies for the early flows at least. Florida also reports some apiaries in only moderate condition, due to a poor wintering setup. On the whole, however, condition of colonies is quite satisfactory and in the southern areas particularly from one week to two weeks ahead of the same date last year.

Honey Plants

Here we come to an almost generally optimistic report. The only "fly in the ointment" is that in the northern sections, there has been some heaving of clover through freezing and thawing. However, we doubt there has been sufficient of

this to make any appreciable difference in the flora. Otherwise, honey plants seem to be above normal condition in practically every section of the country. In California it is to be particularly noted that while honey plants in the desert areas have suffered over a period of several extremely dry years, the "come backs" seem to have been quick and bees are now or have been harvesting from the early nectar and pollen sources which have been so lacking in past years.

Moisture

Here again we have above ordinary conditions. In fact, throughout all sections of the country, with the few exceptions as noted below, moisture has been either satisfactory or above normal. There are some instances where it is reported as being too wet which however is not a bad condition.

The western sections of Nebraska, Kansas, eastern Colorado and going down into western Oklahoma, Texas and over into New Mexico and Arizona, are reporting that even though there have been some late rains, the subsoil moisture is insufficient, and dry conditions are still feared. This has to some extent extended up into Wyoming and southern Montana, but later snows and rains have pretty well discounted such conditions in the latter case.

California and the west coast are enjoying the heaviest moisture in many years, and the mountains apparently are "clogged full" with snow so that there should be no qualms about the possibility of ample irrigation.

Honey Unsold

The amount of honey unsold is also of negligible quantity. While there is some honey held in the hands of the larger packers and some in the hands of the small individual packer, these amounts are not any more than will be needed to carry on until the new crop is harvested. Such conditions, we be-

lieve, are above what we have seen in the past several years, and should presage quite satisfactory conditions to take what may be above a normal crop should it materialize.

Are Prices Up?

In the better retailing sections where there are fewer commercial beekeepers, there has been no tendency on the part of the small beekeeper-packer to advance his prices. However, as we go farther west, we find that the larger packer and larger individual beekeeper are running short of honey and as the demand still continues, there has been a definite tendency upward on honey. In fact, this has ranged up to as high as 1½ cents a pound above the support price which was the criterion previously.

We learn of carloads selling as high as 11½ cents per pound in Dakota and Montana and ton quantities at 12 cents are not exceptional, with honey in many instances being searched for. Again a desirable condition!

Summary

Reviewing the above, except for quite heavy amounts of honey in the eastern provinces of Canada, there will not be much of a carry-over anywhere in the North American continent.

One thing will have to be watched carefully this spring. With the bees breeding earlier than usual, probably ahead of honey plants, and not having as heavy stores as might have been desirable, there will be a tendency for the bees to run short on feed. Starvation or spring dwindling through lack of feed may be the ultimate outcome unless our reader is prepared to watch his bees carefully and make sure that any shortage in natural gathering of both pollen and nectar are overcome by the feeding of sugar sirup and pollen supplements.

All in all, however, the conditions look rosy for the present year. Cool inclement weather and rains which will not allow the bees to get into the field seem to be the only deterrents, except in those special spots where drought is possible.

Honey Wanted—Care and less than
car. Top Prices.
C. W. Aepler Co., Oconomowoc, Wis.

The Market Place . . .

BEEES AND QUEENS

CAUCASIAN BEES—2-lb. pkg. \$3.00; 3-lb. pkg. \$4.00. Queens \$1.00 each. Tillery Brothers, Greenville, Ala.

THE NORMA ROY APIARY—Italian bees with untested queen, 3 pounds with queen \$3.50; 4 pounds with queen \$4.00; queenless packages, deduct 75c from above prices. Book your order now; no down payment required. Live delivery and health certificate. Norma E. Roy & Son, Hesser, Louisiana.

DARK ITALIANS bred for heavy production. 3-lb. packages with young queens \$3.75; queens \$1.00. Henry Lochr, Caldwell, Texas.

CAUCASIAN BEES AND QUEENS—Extra good workers and very gentle. 2-lb. with queen \$3.50; 3-lb. with queen \$4.50. Select untested queens, 1 to 25, \$1.20; 25 to 50, \$1.10; 50 up, \$1.00 each. All orders given special attention. Black River Apiaries, Elliott Curtis, Mgr., Graham, North Carolina.

WILL FILL YOUR CAGES with certified Italians 50 cents pound after May first. Write for other package prices. A. V. Dowling, Valdosta, Georgia.

NUCLEI AND PACKAGES delivered by truck in New York or any eastern state. Nuclei \$5.50; 3-lb. packages with queen \$4.00. C. D. O'Neill, Haines City, Florida.

YANCEY HUSTLERS—Packages and queens—ready April 1st. Three band Italians, bred for business. Overweight packages, queens spring reared under ideal conditions, all guaranteed to please. 2-lb. pkg. with queen \$3.50; 25 or more at \$3.25 each; 50 or more at \$3.00 each. For 3-lb. packages add \$1.00 to above prices. Caney Valley Apiaries, Bay City, Texas.

THREE Banded ITALIAN bees and queens, best of quality. 2-lb. with queen \$3.50; 3-lb. with queen \$4.50. Select untested queens, 1 to 25, \$1.20; 25 to 50, \$1.10; 50 up, \$1.00. Write for prices on larger orders. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, North Carolina.

GOLDEN ITALIAN BEES AND QUEENS very yellow and gentle to work with. 2-lb. with queen \$3.50; 3-lb. with queen \$4.50. Select untested queens, 1 to 25, \$1.20; 25 to 50, \$1.10; 50 up, \$1.00. Satisfaction guaranteed. Carolina Bee Farm, W. O. Curtis, Mgr., Graham, North Carolina.

ITALIAN QUEENS \$1.00 each: Carniolans \$1.25; Caucasians \$1.50. All queens by Air Mail. Walter D. Leverette, Box 364, Ft. Pierce, Florida.

BRIGHT 3 BAND ITALIAN bees and queens—3-pound \$4.75; 4-pound \$5.75; 5-pound \$6.75. Queens \$1.00 delivered. Luther Pickett, Owner Orange Bee Co., Edna, N. C.

YELLOW ITALIAN bees and queens. Quality and service guaranteed. 2-lb. with queen \$3.65; 3-lb. with queen \$4.65. Queens \$1.00. O. E. Brown, Route 1, Ashboro, N. C.

FOR SALE

FOR SALE—Twenty colonies Italians. 100 full-depth bodies with extracting combs. All 10-frame. Radial Extractor, 12 frame. Two 1800 lb. storage tanks, etc. Alf. Hansen, 5002 No. 23 St., Omaha, Nebr.

FOR SALE—Large quantity Root supers and frames, both K.D. and assembled, never used. Also all kinds used materials. Robert A. Cavin, Rt. 2, Blairstown, N. J.

FOR SALE—Two eight-frame Superior Lifetime extractors, good shape, twelve-inch baskets. Schreiber Honey Company, Gooding, Idaho.

Copy for this department must reach us not later than the tenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rate of Classified advertising—13 cents for each word, letter, figure or initial, including the name and address. Minimum ad. ten words. As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy. Advertisers offering used equipment or bees on consignment must guarantee them free from disease or certificate of inspection from authorized inspector. The conditions should be stated to insure that buyer is fully informed.

40 acres land all open but a few acres. 8 room house with two baths, half basement. Big honey house, chicken coop, small barn. 30 4-story hives, 20 extra bottoms, 200 extra tops, queen excluders, Root 45-frame extractor, steam boiler, 100 cases used 5-lb. honey jars, Brand heater and strainer, clamp truck and other items. Priced at \$4500.00. Located 6 miles southeast of Roseau, Minnesota. Carl A. Wenner, 414 5th St., Willows, Calif.

FOR SALE—35 or 40 stands of bees, about 30 empties, 100 supers mostly filled, 25 extracting frames empty. All disease free. 8 and 10 frame stuff. C. M. Barker, Millersburg, Iowa.

FOR SALE—1000 or more colonies of bees in northern Minnesota. Hopkins Honey Farms, Maringoulin, La.

COMPLETE COMMERCIAL honey packing line handling all sizes glass containers, daily capacity 5000 for sale or trade for 10 frame hives of drawn combs. Write Box 17, c/o American Bee Journal.

HONEY HOUSE FOR SALE in Hornick, Iowa, close to Sioux City, 26' x 42' with a basement. Running water and electricity. Main floor 30' above ground for loading. Price \$1500.00, \$500.00 down and terms on balance. Write for details. H. Birchard, Thief River Falls, Minn.

FOR SALE—250 units consisting of bottom board, standard hive body with combs, wood cover with feeder jar, entrance cleat, one standard super, \$6.50 each. No disease. Robert Denny, Roseau, Minn.

40 or more colonies bees in 10-frame standard equipment. Several hundred empty supers with frames, 4-frame extractor with power attachment, 1948 GMC 1/2 ton pickup truck with 4 speed drive. Boom attachment for loading bees for moving and other equipment. If interested contact Archie Fitzgerald, O'Fallon, Ill.

FOR SALE—Good as new 8-frame section supers, No. 1 and T (Krusse) styles, well painted at \$1.50 each. Furnishings for 4 1/2 sections and springs at \$2.00 per 100. L. R. Stewart, Newport, Ind.

20 apiaries, 900 colonies. Irrigated cotton blossom honey. John Bennett, Box 132, Safford, Arizona.

90 colonies equipment for comb and extracted honey. No disease. Edwin Krinke, Bay City, Wis.

BEEES—10-frame hives with supers, queen excluders. Like new; disease free. \$10.00 each, lots of 100 or more. Homer Cooke, Winston-Salem, N. C.

FOR SALE—17 M.D. hives and combs, 48 M.D. supers with combs, miscellaneous lids and bottoms, 18 standard 10-fr. bodies with combs, \$125 cash for the lot. 75 miles from Minneapolis, Minn. No foul brood. Write H. A. Sundean, Rt. 4, Santa Cruz, Calif.

FOR SALE OR TRADE for honey—Ten colonies and all equipment. Some used, some new. Arthur J. DeMars, 1516 Midway Parkway, St. Paul 4, Minnesota.

FOR SALE—Complete bee business consisting of 200 colonies, in five apiaries, plenty of equipment including extractor and tanks. Located in one of Michigan's best bee and honey counties. All state inspected in 1951. John Keller, Jasper, Michigan.

FOR SALE—35 10-frame supers, 50 8-frame supers, 30 8-frame hives. Chas. Sherwood, Victor, Iowa.

HONEY AND BEESWAX WANTED

WANTED—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Michigan.

WANTED—Extracted honey, white or light amber, in 60's. State price in first letter. Ed. Heidt, 1004 W. Washington St., Bloomington, Illinois.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

WANTED—All grades comb and extracted honey, large or small amounts. Quote price in first letter. Mail sample. King Honey Co., 4308-10 E. Truman Road, Kansas City, Mo.

WRITE FOR SHIPPING TAGS and current quotations on rendered beeswax. Any amount from one pound up bought. If you have 25 pounds or more, save 25% by letting us work it into foundation for you. Walter T. Kelley Co., Paducah, Kentucky.

CARLOADS or less of honey and wax. Send sample and price. Alexander Co., 819 Reynolds, Toledo, Ohio.

COMB AND EXTRACTED HONEY wanted. Truck or carload lots. Contact Victor Honey Farms, Josephine, Texas.

WANTED—Comb to cut and white grades. Mail samples. Cole Honey Co., 4460 Piedmont Ave., Oakland, California.

HONEY WANTED—Any amount. If you want more for your honey sell it to Cloverdale Honey Co., Fredonia, New York.

HONEY FOR SALE

NEW CROP OF HONEY shipped daily from producer in Florida. Pure orange blossom, 5-lb. pail \$2.25. Pure Florida cut comb honey, 5-lb. pail \$2.75. No C.O.D. orders; all shipments prepaid. E. R. Raley, Box 1610, Daytona Beach, Florida.

ANY GRADE—any amount. Alexander Company, 819 Reynolds, Toledo, Ohio.

ORANGE, PALMETTO AND MANGROVE honey in new sixties. Peter W. Sowinski, Ft. Pierce, Florida.

FANCY CLOVER HONEY 15c per pound in 60-lb. cases. First order from ad. Ohmert Bee Farms, Dubuque, Iowa.

CLOVER HONEY in new cans. Case or truckloads. Sample 25c. Harry C. Kirk, Armstrong, Iowa.

CLOVER EXTRACTED HONEY in sixties. Ralph Gamber, 910 State, Lancaster, Pennsylvania.

HONEY, white clover, 16c per lb. 5 sixties or more. 15c. Satisfaction guaranteed. Lose Brothers, 206 E. Jefferson, Louisville, Ky.

WHITE HONEY in sixties. Truck lots or less. Markstad, Canton, Minn.

CLOVER, Goldenrod and Buckwheat. All size containers. A. I. Root Company of Syracuse, New York.

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Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

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Oconomowoc, Wisconsin

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THE BIGGEST BEE SUPPLY CATALOGUE PUBLISHED (64 pages) free for the asking. Big factory manufacturing a complete line of wooden goods, comb foundation, metal goods, veils and gloves, carloads in stock, daily shipments, save 20%. **WALTER T. KELLEY CO., PADUCAH, KENTUCKY.**

SOUTHERN CALIFORNIA HEADQUARTERS for Bee Supplies. Make our facilities your "Trading Post." Complete stocks. See our Bulletin Board for Budget Bargains. The Diamond Match Company, 1300 Produce St., Los Angeles 21, Calif.

FOR CHRYSLER all steel electric welded queen excluders in the U.S.A. write to: Prairie View Honey Co., 12303-12th St., Detroit 6, Michigan. Ask for circular E-2.

BEE SUPPLIES—Tin packages, 10 sizes glass jars, paper shipping supplies, window cartons and other items. Roscoe F. Wixson, Dundee, N. Y.

THE ONLY COMB FOUNDATION PLANT in the East. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, Rt. No. 3, Auburn, New York.

BEE SUPPLIES—Catalogue free. Hodgson Bee Supplies Ltd., 565 13th Ave., New Westminster, B.C., Canada.

PURE POLLEN—Collected from disease-free colonies. Stimulate early spring brood rearing. One pound plus soybean flour and syrup makes 12 pounds of mixture. Pound \$1.25; 2 pounds \$2.25; 4½ pounds \$4.90; 9 pounds \$9.25 postpaid. Feeding instructions enclosed. University of Arkansas, Fruit and Truck Branch Experiment Station, Hope, Arkansas.

YOUR WAX WORKED into quality medium brood foundation for 23c pound; 100 pounds \$19.00. Medium brood foundation for sale at 85c pound. Fred Peterson, Alden, Iowa.

QUEENBEE PAINTING OUTFIT—\$150. Colony records, 10-15c postpaid. Southwick Apiarists, Waban, Massachusetts.

GRAFTING SUCCESSFULLY—Big improvement humidifies grafted cells and indicates next graft. Patent applied for. 32c postpaid. Mancos Apiaries, Mancos, Colorado.

WANTED

WE HAVE CLOVER PASTURE for 1500 colonies. Bonus for alfalfa seed plantings. Write Hansmeier & Son, Bristol, S. Dak.

TO BUY—Good used capping press. Gerald Hodson, Amboy, Indiana.

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

POSITION AND HELP WANTED

THREE MEN—Experienced or inexperienced to work in our apiaries and packing plant. Good wages, bonus, other advantages in offer. Schultz Honey Farms, Ripon, Wisconsin.

EXPERIENCED MAN AVAILABLE for work during honeyflow. One month or six weeks. Write M. P. Rozmaboff, c/o Universal Leaf Tobacco Co., Inc., Richmond 14, Va.

IMMEDIATE EMPLOYMENT, one or two men, general apiary work and to help shake package bees, April and May. Permanent employment for one. Large modern outfit. First class equipment. Give age, experience first letter. H. C. Short, Fitzpatrick, Ala.

EXPERIENCED APIARIST, age 39, desires to operate apiary, or on shares up to many colonies. Fifteen years' experience, excellent references. H. Rikk, 453 Montague Street, Sudbury, Ontario.

WANTED—Experienced help for honey production in Minnesota. Opportunity for right man to take over one thousand or more colonies following season. Hopkins Honey Farms, Maringouin, La.

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EVERFLOWERING LOCUST (Robinia semperflorans), strong 4-5 ft. trees, each \$2.75; 3 for \$6.50; 12 for \$20.50. **VITEX INCISA NEGUNDO** trees, 3 for \$2.50. American Bitterweet, strong 2-3 ft., 6 for \$2.00. All postpaid. Free honey plant catalogue. Pellett Gardens, Atlantic, Iowa.

SEEDS OF HONEY PLANTS—Special for trial: 24 varieties (seed) for \$2.75. **USUAL NECTAR PERENNIALS**, plants for quick results: 36 plants (6 varieties) \$5.00. Postpaid. See free illustrated catalogue. Pellett Gardens, Atlantic, Iowa.

THRIFTY BEES

Three-Banded Italians only

Prices on package bees are F.O.B. and include queen.

2 lb. packages in lots of 1 to 24, \$3.50; 25 to 99, \$3.25; 100 up, 3.00 each.

For larger packages add 80c for each additional pound of bees.

Queens post paid—1 to 24, \$1.10; 25 to 99, \$1.05; 100 up, \$1.00 each.

10% books order. Balance 10 days before shipment.

We guarantee live delivery and full weight packages of young **THRIFTY BEES**.

W. J. Forehand & Sons
Fort Deposit, Ala.

Breeders Since 1898

2-Lb. Bees with Queen \$2.75

3-Lb. Bees with Queen \$3.50

Queens Each .85

Additional Lb. Bees .75

For Queenless Package Deduct Price of Queen.

No Charges for Clipping or Dotting Queens. Over Weight and Live Delivery Guaranteed.

Write for Our Prices on 2 to 500 Pkgs., Delivered by Truck.

B. A. ANDERSON & CO.
Opp, Alabama

SPECIAL—Any three \$1.20 collection in our catalog at \$3.00 postpaid: ever flowering locust (Robinia semperflorans) trees, strong 5 ft., \$2.20 each, 3 ft. \$6.50 with 2 other locusts free postpaid; 2 Chinese vitex 15" for \$1.20. Free catalog. Six bee favorite all summer hardy perennials, strong 2 year, \$1.00 postpaid. Anise hyssop, blue salvia pratensis, loosestrife, daisy, pink aster, motherwort. Nicollet County Nursery, St. Peter, Minn.

MISCELLANEOUS

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19th Annual
Easter Seal Appeal
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for
1952

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